

Hwanhee Hong, PhD

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Date Prepared: January, 2025

Education:	<u>Institution</u>	<u>Date (Year)</u>	<u>Degree</u>
High School	Daeil Foreign Language High School, Seoul, Korea	2004	Major in English
College	Chung-Ang University, Seoul, South Korea	2008	BS in Statistics
Graduate	Harvard University, Boston, MA, USA	2010	MS in Biostatistics
School	University of Minnesota, Minneapolis, MN, USA	2013	PhD in Biostatistics

Professional training and academic career (chronologically, beginning with first postgraduate position):

<u>Institution</u>	<u>Position/Title</u>	<u>Dates</u>
Division of Biostatistics, Univ. of Minnesota	Postdoctoral Associate	2013 – 2014
Dept. of Mental Health, Johns Hopkins Bloomberg School of Public Health	Postdoctoral Fellow	2014 – 2018
Dept. of Biostatistics and Bioinformatics, Duke University	Assistant Professor	2018 – 2023
Dept. of Biostatistics and Bioinformatics, Duke University	Associate Professor	2023 – Present

Publications:

A. Refereed journals: (†author names in alphabetical order; *equal contribution)

A1. Methodological papers

1. **Hong H**, Carlin BP, Shamliyan T, Wyman JF, Ramakrishnan R, Sainfort F, and Kane RL (2013). Comparing Bayesian and frequentist approaches for multiple outcome mixed treatment comparisons. *Medical Decision Making*. 33(5):702-714. PMID: 23549384
2. Ohlssen D, Price KL, Xia HA, **Hong H**, Kerman J, Fu H, Quartey G, Heilmann CR, Ma H, and Carlin BP (2014). Guidance on the implementation and reporting of a drug safety Bayesian network meta-analysis. *Pharmaceutical Statistics*. 13(1):55-70. PMID: 24038897
3. **Hong H**, Fu H, Price KL, and Carlin BP (2015). Incorporation of individual patient data in network meta-analysis for multiple continuous endpoints, with application to diabetes treatment. *Statistics in Medicine*. 34(20):2794-2819. PMID: 25924975
4. Zhang J, Chu H, **Hong H**, Neaton JD, Virnig BA, and Carlin BP (2015). Bayesian hierarchical models for network meta-analysis incorporating nonignorable missingness. *Statistical Methods in Medical Research*. 26(5):2227-2243. PMID: 26220535
5. **Hong H**, Chu H, Zhang J, and Carlin BP (2016). A Bayesian missing data framework for generalized multiple outcome mixed treatment comparisons. **(with discussion and rejoinder)**. *Research Synthesis Methods*. 7(1):6-22. PMID: 26536149
6. **Hong H**, Chu H, Zhang J, and Carlin BP (2016). Rejoinder to the discussion of "a Bayesian missing data framework for generalized multiple outcome mixed treatment comparisons," by S. Dias and A. E. Ades. *Research Synthesis Methods*. 7(1):29-33. PMID: 26220535
7. **Hong H**, Rudolph K, and Stuart EA (2017). Bayesian approach for addressing differential covariate measurement error in propensity score methods. *Psychometrika*. 82(4):1078-1096. PMID: 27738956
8. **Hong H**, Fu H, and Carlin BP (2018). Power and commensurate priors for synthesizing aggregate and individual patient-level data in network meta-analysis. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*. 67(Part 4):1047-1069.

9. Susukida R, Crum RM, **Hong H**, Stuart EA, and Mojtabai R (2018). Comparing pharmacological treatments for cocaine dependence: Incorporation of methods for enhancing generalizability in meta-analytic studies. *International Journal of Methods in Psychiatric Research*. 27(4):e1609. PMID: 29464791
10. **Hong H**, Aaby DA, Siddique J, and Stuart EA (2019). Propensity score-based estimators with multiple error-prone covariates. *American Journal of Epidemiology*. 188(1):222-230. PMID: 30358801
11. Schmid I, Rudolph KE, Nguyen TQ, **Hong H**, Seamans MJ, Ackerman B, and Stuart EA (2020). Comparing the performance of statistical methods that generalize effect estimates from randomized controlled trials to much larger target populations. *Communications in Statistics - Simulation and Computation*. DOI: 10.1080/03610918.2020.1741621.
12. **Hong H**, Wang C, Rosner GL (2021). Meta-analysis of rare adverse events in randomized clinical trials: Bayesian and frequentist methods. *Clinical Trials*. 18(1):3–16. PMID: 33258698
13. Seamans MJ, **Hong H**, Ackerman B, Schmid I, and Stuart EA (2021). Generalizability of subgroup effects. *Epidemiology*. 32(3):389–92. PMID: 33591050
14. Li F, **Hong H**, and Stuart EA (2021). A note on generalizing causal effects from randomized trials to target populations. *Communications in Statistics-Theory and Methods*. DOI: 10.1080/03610926.2021.2020291
15. **Hong H**, Liu L, Mojtabai R, Stuart EA (2023) Calibrated meta-analysis to estimate the efficacy of mental health treatments in target populations: An application to paliperidone trials for treatment of schizophrenia. *BMC Medical Research Methodology*. 23, 150. PMID: 37365521
16. Liu Z, Amer FMA, Xiao M, Xu C, Furuya-Kanamori L, **Hong H**, Siegel L, Lin L (2023). The normality assumption on between-study random effects was questionable in a considerable number of Cochrane meta-analyses. *BMC Medicine*. 2023 Mar 29;21(1):112. PMID: 36978059
17. Brantner CL, Chang T, Nguyen TQ, **Hong H**, Stefano LD, Stuart EA (2023). Methods for integrating trials and non-experimental data to examine treatment effect heterogeneity. *Statistical Science*. 38(4):640-654. PMID: 38638306
18. Brantner CL, Nguyen TQ, Tang T, Zhao C, **Hong H**, Stuart EA (2024). Comparison of methods that combine multiple randomized trials to estimate heterogeneous treatment effects. *Statistics in Medicine*. 43(7):1291-1314. PMID: 38273647
19. **Hong H**, Liu L, Stuart EA (2025). Estimating target population treatment effects in meta-analysis with individual participant-level data. *Statistical Methods in Medical Research*. doi: 10.1177/09622802241307642. PMID: 39828917
20. Hua K, Wang X, **Hong H** (2025). Network Meta-Analysis of Time-to-Event Endpoints with Individual Participant Data using Restricted Mean Survival Time Regression. *Biometrical Journal*. Forthcoming
21. Hua K, Wojdyla D, Carnicelli A, Granger C, Wang X, **Hong H** (2025). Network meta-analysis with individual participant-level data of time-to-event outcomes using Cox regression. *Statistics in Medicine*. Forthcoming.
22. Yan M, **Hong H**, Wilson J, Goldstein BA (2025). Estimating the Observability of an Outcome from an Electronic Health Records Dataset Using External Data. *American Journal of Epidemiology*. Forthcoming.

A2. Collaborative and medical papers

23. Wester WC, Koethe JR, Shepherd BE, Stinnette SE, Rebeiro PF, Kipp AM, **Hong H**, Bussmann H, Gaolathe T, McGowan CC, Sterling TR, and Marlink RG (2011). Non-AIDS-defining events among HIV-1-infected adults receiving combination antiretroviral therapy in resource-replete versus resource-limited urban setting. *AIDS*. 25(12):1471-1479. PMID: 21572309

24. Shippee TP, **Hong H**, Kane RL, and Henning-Smith C (2015). Longitudinal changes in nursing home resident-reported quality of life: The role of facility characteristics. *Research on Aging*. 37(6):555-580. PMID: 25651583
25. Mayo-Wilson E, Hutfless S, Li T, Gresham G, Fusco N, Ehmsen J, Heyward J, Vedula S, Lock D, Haythornthwaite J, Payne JL, Cowley T, Rosman L, Twose C, Stuart EA, **Hong H**, Doshi P, Suarez-Cuervo C, Singh S, and Dickersin K (2015). Integrating multiple data sources (MUDS) for meta-analysis to improve patient-centered outcomes research: a protocol. *Systematic Reviews*. 4(1):1. PMID: 26525044
26. Li T, Lindsey K, Rouse B, **Hong H**, Shi Q, Friedman DS, Wormald R, and Dickersin K (2016). Comparative effectiveness of first-line medications for primary open angle glaucoma - A systematic review and network meta-analysis. *Ophthalmology*. 123(1):129-140. PMID: 26526633
27. Mayo-Wilson E, Fusco N, Li T, **Hong H**, Canner J, Dickersin K, and the MUDS team (2017). Multiple outcomes and analyses in clinical trials create challenges for interpretation and research synthesis. *Journal of Clinical Epidemiology*. 86:39-50. PMID: 28529187
28. Mayo-Wilson E, Li T, Fusco N, Bertizzolo L, Canner J, Cowley T, Doshi P, Ehmsen J, Gresham G, Guo N, Haythornthwaite J, Heyward J, **Hong H**[†], Lock D, Payne J, Rosman L, Stuart EA, Suarez-Cuervo C, Tolbert E, Twose C, Vedula S, and Dickersin K (2017). Cherry-picking by trialists and meta-analysts can drive conclusions about intervention efficacy. *Journal of Clinical Epidemiology*. 91:95-110. PMID: 28842290
29. Li T, Mayo-Wilson E, Fusco N, **Hong H**, Dickersin K, and the MUDS investigators (2018). Caveat emptor: the combined effects on multiplicity and selective reporting. *Trials*. 19(1):497. PMID: 30223876
30. Siotos C, **Hong H**, Uzosike A, Seal SM, Rosson GD, Cooney CM, and Cooney DS (2019). Keloid excision and adjuvant treatments: a network meta-analysis. *Annals of Plastic Surgery*. 83(2):154-162. PMID: 31232819
31. Lopes RD, **Hong H**, Harskamp RE, Bhatt DL, Mehran R, Cannon CP, Granger CB, Verheugt FWA, Li J, Berg JMt, Sarafoff N, Gibson CM, and Alexander JH (2019). Safety and efficacy of antithrombotic strategies in patients with atrial fibrillation undergoing percutaneous coronary intervention: a network meta-analysis of randomized controlled trials. *Journal of the American Medical Association Cardiology*. 14(8):747-755. PMID: 31215979
32. Mayo-Wilson E, Fusco N, Li T, **Hong H**, Canner JK, Cowley T, Haythornthwaite J, Payne J, Tolbert E, and Dickersin K (2019). Harms are assessed inconsistently and reported inadequately Part 1: Systematic adverse events. *Journal of Clinical Epidemiology*. 113:20-27. PMID: 31055175
33. Mayo-Wilson E, Fusco N, Li T, **Hong H**, Canner JK, Cowley T, Haythornthwaite J, Payne J, Tolbert E, and Dickersin K (2019). Harms are assessed inconsistently and reported inadequately Part 2: Nonsystematic adverse events. *Journal of Clinical Epidemiology*. 113:11-19. PMID: 31055176
34. Mayo-Wilson E, Fusco N, **Hong H**, Li T, Canner JK, and Dickersin K (2019). Opportunities for selective reporting of harms in randomized clinical trials: Selection criteria for non-systematic adverse events. *Trials*. 20:553. PMID: 31488200
35. Lopes RD, **Hong H**, and Alexander JH (2019). Antithrombotic therapy after acute coronary syndrome and/or percutaneous coronary intervention in atrial fibrillation: finding the sweet spot. *European Heart Journal*. 40(46):3768-3770. PMID: 31774111
36. Lopes RD, **Hong H**, Harskamp RE, Bhatt DL, Mehran R, Cannon CP, Granger CB, Verheugt FWA, Li J, Berg JMt, Sarafoff N, Vranckx P, Goette A, Gibson CM, and Alexander JH (2020). Optimal antithrombotic regimens for patients with atrial fibrillation undergoing percutaneous coronary intervention: an updated network meta-analysis. *Journal of the American Medical Association Cardiology*. 5(5):582-589. PMID: 32101251

37. Congdon M, **Hong H**, Young RR, Cunningham CK, Enane LA, Arscott-Mills T, Banda FM, Chise M, Motlathledi K, Feemster K, Patel SM, Boiditswe S, Leburu T, Shah SS, Steenhoff AP, and Kelly MS (2020). Effect of Haemophilus influenzae type b and 13-valent pneumococcal conjugate vaccines on childhood pneumonia hospitalizations and deaths in Botswana. *Clinical Infectious Diseases*. 73(2):e410–e416. PMID: 32634831
38. Heston S, Young RR, **Hong H**, Akinboyo IC, Tanaka JS, Martin PL, Vinesett R, Jenkins K, McGill LE, Hazen KC, Seed PC, and Kelly MS (2020). Microbiology of bloodstream infections in children after hematopoietic stem cell transplantation: a single-center experience over two decades (1997-2017). *Open Forum Infectious Diseases*. 7(11):ofaa465. PMID: 33209953
39. Wang L, Paller CJ, **Hong H**, De Felice A, Alexander GC, and Brawley O (2021). Comparison of systemic treatments for metastatic castration-sensitive prostate cancer: A systematic review and network meta-analysis. *Journal of the American Medical Association Oncology*. 7(3):412–20. PMID: 33443584
40. Carnicelli AP, **Hong H**, Giugliano RP, Connolly SJ, Eikelboom J, Patel MR, Wallentin L, Morrow DA, Wojdyla D, Hua K, Hohnloser SH, Oldgren J, Ruff CT, Piccini JP, Lopes RD, Alexander JH, Granger CB, on behalf of the COMBINE AF Investigators (2021). Individual patient data from the pivotal randomized controlled trials of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation (COMBINE AF): design and rationale. *American Heart Journal*. 233:48–58. PMID: 33296688
41. Mayo-Wilson E, Chen X, Qureshi R, Dickinson S, Golzarri-Arroyo L, **Hong H**, Gorg C, and Li T (2021). Restoring invisible and abandoned trials of gabapentin for neuropathic pain: A clinical and methodological investigation (protocol). *BMJ Open*. 11(6):e047785. PMID: 34193496
42. Wang L, **Hong H**, Alexander GC, Brawley O, Paller C, and Ballreich J (2022). Cost-effectiveness of systemic treatments for metastatic castration-sensitive prostate cancer: An economic evaluation based on network meta-analysis. *Value in Health*. 25(5):796-802. PMID: 35500949
43. Wang L, Paller CJ, **Hong H**, Rosman L, Felice AD, Brawley O, and Alexander GC (2022). Comparison of treatments for nonmetastatic castration-resistant prostate cancer: Matching-adjusted indirect comparison and network meta-analysis. *Journal of the National Cancer Institute*. 114(2):191-202. PMID: 33830214
44. Carnicelli AP, **Hong H**, Connolly SJ, Eikelboom J, Giugliano RP, Morrow DA, Patel MR, Wallentin L, Alexander JH, Bahit MC, Benz AP, Bohula EA, Chao T, Dyal L, Ezekowitz M, Fox KA, Gencer B, Halperin J, Hijazi Z, Hohnloser SH, Hua K, Hylek E, Kato ET, Kuder J, Lopes RD, Mahaffey K, Oldgren J, Piccini JP, Ruff C, Steffel J, Wojdyla D, and Granger CB (2022). Direct Oral Anticoagulants versus Warfarin in Patients with Atrial Fibrillation: Patient-Level Network Meta-Analyses of Randomized Clinical Trials with Interaction Testing by Age and Sex. *Circulation*. 145(4):242-255. PMID: 34985309. (**Selected to featured article**)
45. Akenroye A, Lassiter G, Jackson JW, Keet C, Segal J, Alexander CG, and **Hong H** (2022). Comparative efficacy of mepolizumab, benralizumab and dupilumab in individuals with eosinophilic asthma: A systematic review and Bayesian network meta-analysis. *Journal of Allergy and Clinical Immunology*. S0091-6749(22)00846-6. PMID: 35772597
46. Halabi S, Zhou J*, He Y*, Bressler L, Hernandez A, Turner N, and **Hong H** (2022). Landscape of Coronavirus disease 2019 (COVID-19) clinical trials: new frontiers and challenges. *Clinical Trials*. DOI: 10.1177/17407745221105106. PMID: 35786000
47. Qureshi R, Chen X, Gorg C, Mayo-Wilson E, Dickinson S, Golzarri-Arroyo L, **Hong H**, Phillips R, Cornelius V, DeMarco MM, Guallar E, and Li T (2022+). Comparing the value of data visualization methods for communicating harms in clinical trials. *Epidemiologic Reviews*. 2022; 44(1): 55-56. PMID: 36065832
48. Moorthy G, Young R, Smith MJ, White MJ, **Hong H**, Kelly MS (2023+). Racial inequities in sepsis mortality among children in the United States. *The Pediatric Infectious Disease Journal*. 2023 May 1;42(5):361-367. doi: 10.1097/INF.0000000000003842. PMID: 36795560

49. Campbell JC, Lee JW, Leadbetter L, Wick CC, Riska K, Cunningham CD, Russomando AC, Truong T, **Hong H**, Kuchibhatla M, Kaylie DM (2023+). Systematic review and meta-analysis for surgery versus stereotactic radiosurgery for jugular paragangliomas. *Otology & Neurotology*. 2023 Mar 1;44(3):195-200. PMID: 36728610
 50. Nopsopon T, Lassiter G, Chen M, Alexander CG, Keet C, **Hong H** and Akenroye A (2023+). Comparative efficacy of tezepelumab, mepolizumab, benralizumab, and dupilumab in eosinophilic asthma: a Bayesian network meta-analysis. *The Journal of Allergy and Clinical Immunology*. 2023 Mar;151(3):747-755. PMID: 36538979
 51. Harrington J, Carnicelli A, Hua K, Wallentin L, Patel MR, Hohnloser SH, Giugliano RP, Fox KA, Hijazi Z, Lopes RD, Pokorney SD, **Hong H**, Granger CB (2023+). Direct Oral Anticoagulants versus Warfarin Across the Spectrum of Kidney Function: Patient-Level Network Meta-Analyses From COMBINE AF. *Circulation*. 2023 June 6;147(23):1748-1757. PMID: 37042255
 52. Nelson AJ, Lopes RD, **Hong H**, Hua K, Slovin S, Tan S, Nilsson J, Bhatt DL, Goodman SG, Evans CP, Clarke NW, Shore ND, Margel D, Klotz LH, Tombal B, Leong DP, Alexander JH, Higano CS (2023+). Cardiovascular effects of GnRH antagonists compared with agonists in prostate cancer: a systematic review. *JACC: CardioOncology*. Forthcoming
 53. **Hong H**, Friedland A, Hu M, Anstrom KJ, Halabi S, McKinnon JE, Amaravadi R, Rojas-Serrano J, Abella BS, Portillo-Vázquez AM, Woods CW, Hernandez A, Boulware DR, Naggie S, Rajasingham R (2023). Safety and efficacy of hydroxychloroquine as prophylactic against COVID-19 in healthcare workers: a meta-analysis of randomized clinical trials. *BMJ Open*. 13(6): e065305. PMID: 37328184
 54. Swaminathan AC, Snyder LD, **Hong H**, Stevens SR, Long AS, Yanchenko E, Qiu Y, Liu R, Zhang H, Fischer A, Burns L, Wruck LM, Palmer SM (2023). External clinical trial and electronic health record control arms in idiopathic pulmonary fibrosis. *American Journal of Respiratory and Critical Care Medicine*. 208(5):579-588 PMID: 37384378
 55. Patel SH, Panagiotakaki E, Papadopoulou MT, Fons C, Grandis ED, Vezyroglou A, Balestrini S, **Hong H**, Liu B, Prange L, Arzimanoglou A, Vavassori R, Mikati MA (2023). Methodology of a natural history study of a rare neurodevelopmental disorder: alternating hemiplegia of childhood as a prototype disease. *Journal of Child Neurology*. doi:[10.1177/08830738231197861](https://doi.org/10.1177/08830738231197861). PMID: 37728088
 56. Mayo-Wilson E, Qureshi R, **Hong H**, Chen X, Li T (2023). Harms were detected but not reported in six clinical trials of gabapentin. *Journal of Clinical Epidemiology*. 164:76-87. PMID: 37871835
 57. Collins SD, Bowers A, Hua K, Moore C, Sethi N, Miller S, Barker PCA, **Hong H**, McCrary AW (2024). Assessing the accuracy of fetal aortic valve range phantom measurements. *Journal of the American Society of Echocardiography*. doi:<https://doi.org/10.1016/j.echo.2024.01.013>. PMID: 38320740
 58. Petch J, Nelson W, Wu M, Ghassemi M, Benz A, Fatemi M, Di S, Carnicelli A, Granger C, Giugliano R, **Hong H**, Patel M, Wallentin L, Eikelboom J, Connolly SJ (2024). Optimizing warfarin dosing for patients with atrial fibrillation using machine learning. *Scientific Reports*. 14, 4516. PMID: 38402362
 59. Wheeler SM, Truong T, Unnithan S, **Hong H**, Myers E, Swamy GK (2024). Obstetric racial disparities in the era of the ARRIVE trial and the COVID-19 pandemic. *Obstetrics & Gynecology*. 143(5):690-699. PMID: 38547489
 60. Armstrong SC, Neshteruk CD, Li JS, Kraus WE, Shah S, Story M, Zucker N, Jones J, Perrin EM, Howard J, Zizzi AR, Wagner BE, Windom M, Truong T, **Hong H**, Burrows J, Skinner AC (2024). Using Parks and Recreation Providers to Enhance Obesity Treatment: A Randomized Controlled Trial. *Pediatrics*. Forthcoming.
- B. Book Chapters:**
61. Carlin BP, **Hong H**. Bayesian network meta-analysis for safety evaluation (2014). *Quantitative Evaluation of Safety in Drug Development: Design, Analysis and Reporting*, eds. Jiang Q and Xia HA, Boca Raton, FL: CRC Press. 2014. p. 223–35.

62. **Hong H**, Price KL, Fu H, Carlin BP (2017). Bayesian network meta-analysis for multiple endpoints. *Methods in Comparative Effectiveness Research*, eds. Morton S and Gatsonis C, Boca Raton, FL: CRC Press 2017. p. 385–407.

Consultant appointments:

- 2014 – 2015 School of Medicine, Johns Hopkins University
 2015 – 2016 Division of Interventional Cardiology, University of Utah Health Sciences Center
 2015 – 2016 School of Social Work, University of Maryland
 2019 Bloomberg School of Public Health, Johns Hopkins University
 2020 – 2021 Department of Epidemiology and Biostatistics, Indiana University School of Public Health-Bloomington

Professional awards and special recognitions:

- 2004 – 2007 Scholarship for Excellent Records, Department of Mathematics and Statistics, Chung-Ang University, Seoul, South Korea
 2011 Outstanding Teaching Assistant Award, Division of Biostatistics, Univ. of Minnesota
 2012 Outstanding Research Assistant Award, Division of Biostatistics, Univ. of Minnesota
 2012 Young Investigator Travel Award, International Society for Bayesian Analysis
 2012 Student Paper Award, ASA Section on Health Policy Statistics
 2013 Jacob E. Bearman Student Achievement Award, Division of Biostatistics, University of Minnesota
 2013 Student Paper Award, ASA Section on Health Policy Statistics
 2014 Delta Omega, Honorary Society in Public Health, University of Minnesota
 2017 Travel Awards for Junior Researchers, Biostatistics in the Modern Computing Era, Medical College of Wisconsin
 2019 Career Development Award, Korean International Statistical Society

Organizations and participation:

A. Professional Committees

- 2020, 2022 Program Committee, Eastern North American Regional Meeting of the International Biometric Society (ENAR) 2020, 2022
 2020 – Present Student Paper Competition Review Committee, ENAR
 2021 – 2023 Publications, Executive Committee, Health Policy Statistics Section, American Statistical Association (ASA)
 2022, 2024 Student Paper Competition Reviewer, Health Policy Statistics Section, ASA
 2022, 2023 Student Paper Competition Reviewer, Section on Bayesian Statistical Science, ASA
 2022 – 2023 Student Committee, International Conference on Health Policy Statistics 2023
 2023 – 2024 Organizing Committee, Duke Industry Statistics Symposium 2023, 2024
 2023 Student Committee, International Conference on Health Policy Statistics, 2023
 2024 Poster Award Judge, ENAR
 2024 – 2025 Scientific Committee, International Conference on Health Policy Statistics, 2025

B. Conference Session Organizer

- 2015 Contributed Session Organizer, International Conference on Health Policy Statistics, Providence, RI
 2017 Invited Session Organizer, Eastern North American Regional Meeting, Washington, DC
 2020 Invited Session Organizer, Eastern North American Regional Meeting, Virtual Meeting (This session was cancelled due to COVID-19)
 2020 Contributed Session Organizer, Session Organizer, International Society for Bayesian Analysis (This session was cancelled due to COVID-19)

2023 Poster Session Organizer, Duke Industry Statistics Symposium, Virtual Meeting
 2023 Invited Session Organizer, Joint Statistical Meetings, Ontario, Canada
 2024 Poster Session and Lightning Talk Organizer, Duke-Industry Statistics Symposium, Durham, NC
 2025 Invited Session Organizer, International Conference on Health Policy Statistics, San Diego, CA
 2025 Invited Session Organizer, Eastern North American Regional Meeting, New Orleans, LA
 2025 Session Organizer, Duke-Industry Statistics Symposium, Durham, NC

C. Conference Session Chair

2017 Atlantic Causal Inference Conference, Chapel Hill, NC
 2018 Eastern North American Regional Meeting, Atlanta, GA
 2019 Eastern North American Regional Meeting, Philadelphia, PA
 2020 Eastern North American Regional Meeting, Virtual Meeting
 2021 Eastern North American Regional Meeting, Virtual Meeting
 2024 Eastern North American Regional Meeting, Baltimore, MD

D. Leadership Positions

2020 – 2024 Math Director, National Mathematics and Science Competition, Korean-American Scientists and Engineers Association (NC Chapter)

External support - gifts, grants, and contracts: (*Denotes PI, Co-PI or Site-PI)

A. Past:

National Institute of Mental Health (NIMH, R01MH099010) 07/01/2013 – 06/30/2017
 Title: Using propensity scores for causal inference with covariate measurement error
 Role: Postdoctoral Fellow, 80% effort, 2014 – 2017 (PI: Stuart, Elizabeth)
 \$827,461

National Eye Institute (U01EY020522) 05/01/2010 – 04/30/2017
 Title: Comparative Effectiveness Research & the Cochrane Eyes & Vision Group
 Role: Statistician, 10% effort, 2014 – 2017 (PI: Dickersin, Kay)
 \$9,725,907

Patient-Centered Outcomes Research Institute (PCORI) 02/01/2015 – 01/31/2016
 Title: Integrating Multiple Data Sources for Meta-analysis to Improve PCOR
 Role: Statistician, 20% effort, 2015 – 2016 (PI: Dickersin, Kay)

Center of Excellence in Regulatory Science and Innovation, FDA 03/01/2014 – 02/28/2018
 Title: Bayesian Approaches for Meta-Analyses of Rare Adverse Events in Randomized Clinical Trials.
 Role: Co-Investigator, 7% effort, 2016 – 2017 (PI: Alexander, George Caleb)

National Institute of Health (R01DA036520) 03/01/2014 – 02/28/2018
 Title: Generalizing RCT Efficacy Evidence: Application to NIDA Clinical Trials Network.
 Role: Statistician, 13% effort, 2016 – 2017 (PI: Mojtabai, Ramin)
 \$722,925

*National Institute of Mental Health (K99MH111807) 07/01/2017 – 07/31/2018
 Title: Estimating Population Effects in Mental Health Research Using Meta-Analysis
 Role: Principal Investigator, 100% effort
 \$117,636

Bristol-Myers Squibb Research Agreement (BMS, DCRI #5911) 01/02/2015 – 05/31/2019
Title: Apixaban AF/ACS Study
Role: Collaborator, 10% effort, 2018 – 2019 (PI: Alexander, John)

*National Institute of Mental Health (R00MH111807) 08/01/2018 – 05/31/2022
Title: Estimating Population Effects in Mental Health Research Using Meta-Analysis
Role: Principal Investigator, 75% effort
\$746,998

Bristol-Myers Squibb (Q-11414) 09/19/2019 – 10/30/2022
Synthetic Control Arm for Idiopathic Pulmonary Fibrosis
Role: Statistician, 5% effort (PI: Palmer, Scott)
\$351,863

*Duke Clinical Research Institute Small Projects 09/01/2021 – 08/31/2023
Title: Comparative effectiveness of COVID-19 treatments by multiple outcomes using Bayesian multivariate network meta-analysis
Role: Principal Investigator, 10% effort (Co-PI: Halabi, Susan)
\$196,336

B. Present:

*National Institute of Mental Health (R01MH126856-01) 09/01/2021 – 05/31/2025
Subcontract to Johns Hopkins University
Title: Combining data sources to identify effect moderation for personalized mental health treatment
Role: Co-Investigator, Duke Site-PI, 25% effort (PI: Stuart, Elizabeth)
\$1,730,235

*Patient-Centered Outcomes Research Institute (ME-2020C3-21145) 11/01/2021 – 11/30/2025
Subcontract to Johns Hopkins University
Title: Advanced computational approaches for integrating data to assess effect heterogeneity
Role: Co-Investigator, Duke Site-PI, 15% effort (PI: Stuart, Elizabeth)
\$749,779

National Institute of Allergy and Infectious Diseases (R21-AI168582) 09/01/2023 – 08/31/2025
Title: Secondary Analyses to Support the Rational Design of Clinical Trials in Chronic Lung Allograft Dysfunction
Role: Co-Investigator, 10% (PI: Todd, Jamie L.)
\$442,750

Patient-Centered Outcomes Research Institute (BPS-2023C1-31080) 8/1/2024 – 11/30/2030
Title: Hospital-to-Home Care Coordination for Children and Youth with Special Health Care Needs
Role: Co-Investigator, 10% effort (PI: Ming, David)
\$5,506,017

Patient-Centered Outcomes Research Institute (PLACER-2022C3-30331) 6/1/2024 – 11/30/2030
Title: Trial of Sequential Medications After TNF failure in JIA (SMART-JIA)
Role: Statistical Investigator (PIs: Schanberg, Laura E. and Barnhart, Huiman)
\$22,705,562

National Institute of Health, NIDDK (R01-DK138027) 8/1/2024 – 6/30/2025
Title: Impact of Integrated Pet Care on Glycemic Control and Diabetes Responsibility

Role: Co-Investigator (PI: Gupta, Olga)
\$987,477

C. Pending:

*National Institute of Mental Health (R01)

Title: Advancing Tailored Treatments for Patients with Mental Disorder Through Network Meta-Analysis

Role: PI, 35% effort (PI: Hong, Hwanhee)

Resubmitted in July 2024

\$1,933,039

Patient-Centered Outcomes Research Institute

Subcontract to Harvard University

Title: Causally interpretable meta-analysis for comparative effectiveness research: methods for indirect comparisons, per-protocol effects, and personalized treatment

Role: Co-Investigator, Duke Site-PI, 10% effort (PIs: Dahabreh, Issa and Chiu, Yu-Han)

Will be resubmitted in January 2025

\$315,299

National Institute of Health (K23)

Title: Teams Engaged in Accessible Mental Health Interventions for Lupus Erythematosus and Dermatomyositis Stress

Role: Biostatistician (PI: Ardalan, Kaveh)

National Institute of Health (R01)

Title: Real world use of anti-obesity medications to treat adolescent obesity: moving beyond the clinical trial

Role: Co-Investigator, 5% effort (PI: Neshteruk, Cody)

Will be resubmitted in November 2024

National Institute of Health (R01)

Title: Dissemination and Implementation of the Clinical Practice Guideline for Pediatric Obesity

Role: Co-Investigator, 5% effort (PI: Skinner, Asheley)

Submitted in June 2024

National Institute of Health (R01)

Title: Improving Uptake of a Child Psychiatry Access Line in Rural Communities

Role: Co-Investigator, 5% effort (PI: Lane, Hannah)

Submitted in July 2024

D. Duke Institutional Funding

2018 – 2019

Department: Department of Pediatrics (Infectious Diseases)

Role: Faculty Statistician

Staff: 100% FTE staff (1 statistician)

Support: 5%

2021 – Present

Duke Clinical Research Institute

Role: T32 Training Faculty

2022 – Present

Department: Division of General Pediatrics and Adolescent Health

Role: Faculty Statistician

Staff: 100% FTE staff (3 statisticians)

Support: 20%

2024 – Present

Department: Duke Center for Child Obesity Research

Role: Faculty Statistician

Staff: 40% FTE staff (2 statisticians)

Support: 10%

Mentoring activities:

A. Postdoctoral Fellow

2022 – Present Qiao Wang, B&B
2024 – Present Wenshan Yu, B&B

B. Doctoral Thesis Advisees

2020 – 2024 Kaiyuan Hua, B&B (Co-adviser: Xiaofei Wang)
Position: Mathematical Statistician in the CDRH at the FDA
2023 – Present Elaona Lemnoto, B&B
2024 – Present Peijin Wang, B&B

C. Master Project Advisees

2019 – 2020 Chenyang Wang, B&B (with financial support)
Position: MS students in data science, University of British Columbia at Vancouver
2019 – 2020 Ziting Yang, B&B (with financial support)
Position: Statistical Programmer, Suzhou Zelgen Biopharmaceuticals Co., China
2019 – 2020 Jinyi Zhou, B&B (with financial support)
Position: Senior Statistician-Computation, Eli Lilly and Company
2021 – 2022 Mengyi Hu, B&B (with financial support)
Position: Biostatistician I, Cytel
2021 – 2022 Blessing Ibe, B&B
Position: Senior Statistician-Computation, Eli Lilly and Company
2021 – 2022 Heewon Kim, B&B (with financial support)
Position: Senior Statistician-Computation, Eli Lilly and Company
2021 – 2022 Rong Zhao, B&B
Position: PhD student in biostatistics, Penn State University
2023 – 2024 Yicheng Shen, Department of Statistical Science
(Recipient of the distinguished Dean's Research Award for Master's Students at Duke; his MS dissertation received Honorable Mention for the 2024 BEST Award for Master's Research, second place in the Department)
Position: PhD student in Biostatistics, Johns Hopkins University

D. Other Advisees

2019 Jianghao Li, B&B, PhD Research Assistant with financial support
2019 – 2020 Tongrong Wang, B&B, PhD Research Assistant with financial support
2019 – 2020 Guangyu Tong, Department of Sociology, PhD Research Assistant
2020 – 2021 Alexander Long, Department of Statistics, NCSU, PhD Research Assistant at DCRI
2022 – 2023 Tengjie Tang, Department of Statistical Science, Duke, MS Research Assistant
2023 Zhuoran Hou, B&B, PhD Rotation
2021 – 2023 Eric Yanchenko, Department of Statistics, NCSU, PhD Research Assistant at DCRI
2021 – 2023 Elaona Lemnoto, B&B, PhD Rotation & Research Assistant
2020 – 2023 Lu Liu, B&B, PhD Research Assistant with financial support
2023 – 2024 Kyungeun Jeon, Department of Statistical Science, Duke, MS Research Assistant
2024 Peijin Wang, B&B, PhD Rotation
2024 – Present Hyunjin Lee, Department of Statistical Science, Duke, Undergraduate student,
2025 – Present Chenxi Li, B&B, PhD Rotation

E. PhD Thesis Committee

2019 – 2021	Lin Wang, PhD, Department of Epidemiology, Johns Hopkins University
2020 – 2022	Ayobami Akenroye, Department of Epidemiology, Johns Hopkins University
2021 – 2024	Dongrak Choi, B&B
2022 – Present	Mengying Yan, B&B
2024 – Present	Quinn Lanners, B&B
2024 – Present	Mian Wei, B&B
2024 – 2025	Pai-Shan Cheng, Division of Biostatistics, University of Toronto

F. Master Project Committee

2019 – 2020	Xiyuan Zhang, B&B
2020 – 2022	Jameson Blount, B&B
2021 – 2022	Yi Liu, B&B
2021 – 2022	Huiyue Li, B&B
2022 – 2023	Zhen Liu, B&B
2022 – 2023	Ziyi Wang, B&B
2022 – 2023	Jackson Dial, B&B
2022 – 2023	Dezhao Fu, B&B
2023 – 2024	Jiahe Tian, B&B
2024 – Present	Edwitch Dely, B&B
2024 – Present	Madeline Losser, B&B

Education / Teaching activities:

A. Teaching

Biostat 719 Generalized Linear Models	Fall 2019* (n=24)
	Fall 2020 (n=25)
	Fall 2021 (n=37)
	Fall 2022 (n=43)
	Fall 2023 (n=44)
	Fall 2024 (n=36)

* Co-taught with Dr. Andrzej S. Kosinski

B. Guest Lecture/Panel

2014	Seminar on Statistical Methods for Mental Health (330.805), Department of Mental Health, Johns Hopkins Bloomberg School of Public Health Instructor: Elizabeth A. Stuart, PhD
2016	Seminar on Statistical Methods for Mental Health (330.805), Department of Mental Health, Johns Hopkins Bloomberg School of Public Health Instructor: Rashelle J. Musci, PhD
2019	Current Problems in Biostatistics (BIOS900), Department of Biostatistics and Bioinformatics, Duke University Instructor: Huiman Xie Barnhart, PhD
2019	Applied Analytic Methods for Population Health Sciences I (DPHS701), Department of Population Health Sciences, Duke University Instructor: Emily O'Brien, PhD and Brad Hammill, DrPH
2022	Integrating multiple data for comparative effectiveness research: Meta-analysis. Summer Institute in Biostatistics.
2024	GS 732: EIS Advanced Academic Writing for Ph.D. Students Instructor: Carolyn Quarterman

Invited Lectures and Presentations: (†: session organizer; *: invited talk)

A. Visiting Professorships

1. *A Bayesian missing data framework for multiple outcome mixed treatment comparisons. Research Center for Data Science: The 3rd International Conference, Chung-Ang University, Seoul, South Korea. July 2012.
2. *Hierarchical Bayesian methods for multiple outcomes in network meta-analysis. Department of Biostatistics, University of Pittsburgh, Pittsburgh, PA. January 2014.
3. *Hierarchical Bayesian methods for multiple outcomes in network meta-analysis. Survival, Longitudinal and Multivariate Data Working Group, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD. October 2014.
4. *Hierarchical Bayesian methods for multiple outcomes in network meta-analysis. Department of Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, MD. October 2014.
5. *Integrating Data for Comparative Effectiveness Research. Department of Biostatistics, Georgia Southern University, Statesboro, GA. January 2017.
6. *Integrating Data for Comparative Effectiveness Research. Department of Statistics, Florida State University, Tallahassee, FL. January 2017.
7. *Integrating Data for Comparative Effectiveness Research. Department of Biostatistics and Computational Biology, University of Rochester Medical Center, Rochester, NY. January 2017.
8. *Meta-Analysis of Rare Adverse Events in Randomized Controlled Trials: Bayesian and Frequentist Methods. Informal Biostatistics Meetings, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, Baltimore, MD. February 2017.
9. *Integrating Data for Comparative Effectiveness Research. Department of Biostatistics and Bioinformatics, Duke Clinical Research Institute, Duke University School of Medicine, Durham, NC. February 2017.
10. *Integrating Data for Comparative Effectiveness Research. Department of Biostatistics, Indiana University, Indianapolis, IN. February 2017.
11. *Integrating Data for Comparative Effectiveness Research. Department of Epidemiology and Biostatistics, Drexel University, Philadelphia, PA. February 2017.
12. *Integrating Data for Comparative Effectiveness Research. Division of Biostatistics, Department of Public Health Sciences, University of California, Davis, Davis, CA. March 2017.
13. *Power and Commensurate Priors for Synthesizing Aggregate and Individual Patient-Level Data in Network Meta-Analysis. Biostatistics in Psychiatry Seminar, Department of Psychiatry, Columbia University, New York, NY. April 2017.
14. *Power and Commensurate Priors for Synthesizing Aggregate and Individual Patient-Level Data in Network Meta-Analysis. Center for Data Science, Chung-Ang University, Seoul, South Korea. November 2017
15. *A Bayesian approach for handling covariate measurement error when estimating population treatment effects. Korean International Statistical Society, Monthly Webinar, July 2022
16. *Estimating population treatment effects in Bayesian meta-analysis. Department of Epidemiology and Biostatistics Seminar (virtual), University of Arizona, February 2024.
17. *Introduction to Bayesian Analysis and Its Applications in Clinical Research. TIMI Study Group Didactic Lecture Series (virtual), Brigham & Women's Hospital, June 2024.

B. International Meetings

1. Hierarchical Bayesian methods for combining efficacy and safety in multiple treatment comparisons. Joint Statistical Meetings, San Diego, CA. July 2012.

2. A Bayesian missing data framework for generalized multiple outcome mixed treatment comparisons. Joint Statistical Meetings, Montreal, Quebec, Canada. August 2013
3. Bayesian approach for addressing differential covariate measurement error in propensity score methods. Joint Statistical Meetings, Seattle, WA. August 2015.
4. †Bayesian network meta-analysis for estimating drug class effects and temporal effects, with applications to primary open angle glaucoma. International Conference on Health Policy Statistics, Providence, RI. October 2015.
5. Incorporation of individual patient data in network meta-analysis for multiple continuous endpoints, with application to diabetes treatment. Joint Statistical Meetings, Chicago, IL. August 2016.
6. Estimating population treatment effects in meta-analysis. International Conference on Health Policy Statistics, Charleston, SC, USA. January 2018
7. A Bayesian approach for handling covariate measurement error when estimating population treatment effect. Joint Statistical Meetings, Denver, CO. August 2019
8. †*Bayesian network meta-analysis for estimating population treatment effects. International Society for Bayesian Analysis. Kunming, China. June 2020. (This session was cancelled due to COVID-19)
9. Transporting causal inferences from network meta-analysis to a target population. International Conference on Health Policy Statistics, Scottsdale, AZ. January 2023.
10. †*Estimating population treatment effects in Bayesian meta-analysis. Joint Statistical Meetings, Toronto, Ontario, Canada. August 2023.
11. †*Comparative effectiveness of antidepressants for major depressive disorder patients using electronic health records from two large health systems in the United States. International Conference on Health Policy Statistics, San Diego, CA. January 2025.
12. †Discussion for “health policy implications of the risks and benefits of generalizing randomized controlled trial inferences” (Discussant). International Conference on Health Policy Statistics, San Diego, CA. January 2025.

13. National Scientific Meetings

1. †*Propensity Score-Based Estimators with Multiple Error-Prone Covariates. Eastern North American Regional meeting of the International Biometric Society, Washington, DC. March 2017.
2. Estimating population treatment effects in meta-analysis. Eastern North American Regional meeting of the International Biometric Society, Atlanta, GA. March 2018.
3. A Bayesian approach for handling covariate measurement error when estimating population treatment effect. Eastern North American Regional meeting of the International Biometric Society, Philadelphia, PA. March. 2019
4. †*Bayesian network meta-analysis for estimating population treatment effects. Eastern North American Regional meeting of the International Biometric Society. Virtual Meeting. March 2020. (This session was cancelled due to the COVID-19 outbreak)
5. *Meta-Analysis of Rare Adverse Events in Randomized Clinical Trials: Bayesian and Frequentist Methods. Eastern North American Regional meeting of the International Biometric Society. Virtual Meeting. March 2021.
6. *Comparing Bayesian methods for creating external controls using multiple historical controls in clinical trials. Duke Industry Statistics Symposium 2023, Virtual. March 2023.

14. Instructional Courses, workshops, symposiums

1. When should antiretroviral treatments be started in Botswana? - Tshepo study. Technical workshop : HIV/AIDS interventions in Botswana, Harvard University, Boston, MA. July 2009.
2. Bayesian approaches for multiple treatment comparisons. Minnesota Evidence-based Practice Center, Minneapolis VA Medical Center, Minneapolis, MN. November 2011.
3. A Bayesian missing data framework for combining multiple outcomes in network meta-analysis. Lilly Research Awards Program Collaboration Seminar, Indianapolis, IN. May 2013.
4. Introduction to indirect comparison and network meta-analysis workshop at AHQR. Agency for Healthcare Research and Quality. Rockville, MD, June 2015. (Taught with Dr. Tianjing Li)
5. Network meta-analysis for behavioral trials: an introduction and overview. Society of Behavioral Medicine Annual Meeting & Scientific Sessions. Washington, DC, March 2016. (Taught with Dr. Tianjing Li)
6. Introduction to meta-analysis and network meta-analysis. BERD Methods Core Applied Seminar, Duke University, Durham, NC. March 2019
7. Bayesian analysis to integrate multiple data for comparative effectiveness research. Duke- Margolis Seminars in Health Policy and Management. Webinar, October 2020.
8. Causal inference in biomedical research: Network meta-analysis and generalizability. Korea Summer Session on Causal Inference. Webinar, July 2021.
9. A Bayesian approach for handling covariate measurement error when estimating population treatment effects. Korea Summer Session on Causal Inference. Webinar, July 2022.
10. Integrating multiple data for comparative effectiveness research: Network meta-analysis. NCSU-Duke SIBS Summer 2022, July 2022
11. Integrating multiple data for comparative effectiveness research: Network meta-analysis. NCSU-Duke SIBS Summer 2024, July 2024

15. Posters

1. Hierarchical Bayesian methods for combining efficacy and safety in multiple treatment comparisons. World Meeting of the International Society for Bayesian Analysis, Kyoto, Japan. June 2012
2. Hierarchical Bayesian methods for combining efficacy and safety in multiple treatment comparisons. Eastern North American Regional meeting of the International Biometric Society, Washington, DC. April 2012

16. Regional presentations and posters

1. Incorporation of individual patient data in network meta-analysis for multiple continuous endpoints, with application to diabetes treatment. G70 conference, Durham, NC. April 2015. (Poster)
2. Propensity score-based estimators with multiple error-prone covariates. Atlantic Causal Inference Conference. New York, NY. May 2016.
3. Power and commensurate priors for synthesizing aggregate and individual patient-level data in network meta-analysis. Biostatistics in the Modern Computing Era, Medical College of Wisconsin, Milwaukee, WI. September 2017.

Editorial Experience:

A. Scientific review report

2024 PCORI Scientist Reviewer for PCORI's Addressing Rare Disease Panel

B. Scientific review journals (# of reviews=98)

Selected journals:

Statistics in Medicine, BMC Medical Research Methodology, Biometrics, Journal of the Royal Statistical Society: Series C, Journal of the American Statistical Association, Research Synthesis Methods, Biostatistics, Pharmaceutical Statistics, Communications in Statistics, Statistical Methods in Medical Research, American Journal of Epidemiology, Epidemiology, Journal of Clinical Epidemiology, Journal of the American Medical Association-Cardiology, BMJ Open, Lancet, PLOS ONE