

Kevin P. Josey, Ph.D.

Assistant Professor
Department of Biostatistics and Informatics
Colorado School of Public Health
University of Colorado

kevin.josey@cuanschutz.edu
[\(303\) 724-8618](tel:(303)724-8618)
<https://linkedin.com/in/kjosey>
<https://github.com/kjosey>

Research Interests

Causal Inference, Machine Learning, Bayesian Methods, Epidemiology, and Health Outcomes Research

Education

Ph.D. Biostatistics

August 2020

Department of Biostatistics & Informatics, Colorado School of Public Health
University of Colorado, Anschutz Medical Campus - Aurora, CO
Advisors: Debashis Ghosh, Ph.D. and Elizabeth Juarez-Colunga, Ph.D.

M.S. Biostatistics

December 2017

Department of Biostatistics & Informatics, Colorado School of Public Health
University of Colorado, Anschutz Medical Campus - Aurora, CO
Advisor: Deborah Glueck, Ph.D.

B.S. Mathematics

May 2015

Regis College
Regis University, Lowell Campus - Denver, CO
Advisor: James Seibert, Ph.D.

Academic Experience

Assistant Professor

August 2023–Present

Department of Biostatistics and Informatics, Colorado School of Public Health
University of Colorado, Anschutz Medical Campus - Aurora, CO

Postdoctoral Fellow

July 2020–June 2023

Department of Biostatistics, T.H. Chan School of Public Health
Harvard University, Longwood Medical Campus - Boston, MA
Advisors: Francesca Dominici, Ph.D. and Rachel Nethery, Ph.D.

Professional Experience

Biostatistician

February 2016–June 2020

Eastern Colorado Health Care System
U.S. Department of Veterans Affairs - Aurora, CO

Biostatistics and Data Management Intern

May 2014–August 2014

Array BioPharma, Inc. - Boulder, CO

Teaching Experience

BIOS 6632: Statistical Theory II

Fall 2024-Present

Advising

PHD STUDENTS

- 1) Nannan Wang, 2024-Present
- 2) Eduardo Romo, 2024-Present

MS STUDENTS

- 1) Nandini Murali, 2024-2025
- 2) Yonatan Wolde, 2024-2025

PHD COMMITTEE

- 1) Keith Barnatchez (Harvard University), 2022-Present
- 2) Zoé Haskell-Craig (New York University), 2024-Present
- 3) Nasim Ildiri (University of Colorado Boulder), 2024-Present
- 4) Shuozhi Zuo, 2024-2025
- 5) Aaron Beckwith, 2025-Present

MS COMMITTEE

- 1) Rindala Fayyad (Harvard University), 2022-2023
- 2) Cole Hoffman, 2024-2025

Publications

JOURNAL ARTICLES

- 1) L. M. Donovan, L. C. Feemster, M. P. Collins, E. E. Gleason, **K. Josey**, K. Duan, ... & D. H. Au (2025). Protocol for a pragmatic trial to enhance quality safety, and patient experience in chronic obstructive pulmonary disease (EQUIP-COPD). *Contemporary Clinical Trials*, 107961.
- 2) A. G. Leonhard, J. McDowell, K. D. Hoerster, S. Hayes, F. Picazo, J. M. Castaneda, ... & L. M. Donovan (2025). Receipt of Weight Management Services Among Patients with OSA and Obesity. *CHEST Pulmonary*, (in Press).
- 3) J. M. Castaneda, A. Leonhard, L. J. Spece, K. I. Duan, B. N. Palen, J. A. Chen, ... & L. M. Donovan (2025). Incidence and Predictors of Long-term Hypnotic Receipt among Patients with Chronic Obstructive Pulmonary Disease. *Annals of the American Thoracic Society*, (in Press).
- 4) J. O. Klompaker, F. Laden, F. Dominici, P. James, **K.P. Josey**, J. Kaufman, ... & J.E. Hart (2024). Long-term exposure to air pollution, greenness and temperature and survival after a nonfatal myocardial infarction. *Environmental Pollution*, 124236.

- 5) M. Tec, **K. Josey**, O. Mudele, & F. Dominici. (2024) Causal Estimation of Exposure Shifts with Neural Networks and an Application to Inform Air Quality Standards in the US. *Proceedings of the 30th ACM SIGKDD Conference of Knowledge Discovery and Data Mining (KDD '24)*
- 6) A. Visaria, E. Kang, A. Parthasarathi, D. Robinson, J. Read, R. Nethery, ... & Setoguchi, S. (2024). Ambient heat exposure patterns and emergency department visits and hospitalizations among medicare beneficiaries 2008–2019. *The American Journal of Emergency Medicine*, 81, 1-9.
- 7) R. Fayyad, **K. Josey**, P. Gandhi, M. Rua, A. Visaria, B. Bates, S. Setoguchi & R. C. Nethery (2024). Air pollution and serious bleeding events in high-risk older adults. *Environmental Research*, 118628.
- 8) A. Visaria, S. P. Huang, C. C. Su, D. Robinson, J. Read, C. Y. Lin, ... & S. Setoguchi. Ambient Heat and Risk of Serious Hypoglycemia in Older Adults with Diabetes Using Insulin in the US and Taiwan: A Cross-National Case-Crossover Study. *Diabetes Care*, dc231189, 2024.
- 9) L. M. Donovan, J.A. McDowell, A. P. Pannick, J. Pai, A. F. Bais, R. Plumley, ... & D.H. Au. Protocol for a pragmatic trial testing a self-directed lifestyle program targeting weight loss among patients with obstructive sleep apnea (POWER Trial). *Contemporary Clinical Trials*, 135, 107378, 2023.
- 10) **K. P. Josey**, R. C. Nethery, A. Visaria, B. Bates, P. Gandhi, A. Parthasarathi, ... & S. Setoguchi. Effects of PM_{2.5} and corticosteroid use on cardiovascular and thromboembolic events among older adults: Evidence of drug-environment interaction. *BMJ Open*, 13(9): e072810.
- 11) R. C. Nethery, **K. P. Josey**, P. Gandhi, J. H. Kim, A. Visaria, B. Bates & S. Setoguchi. Effects of seasonal PM_{2.5} exposure on cardiovascular and thromboembolic hospitalizations in Medicare beneficiaries with high-risk chronic conditions. *American Journal of Epidemiology*, kwad089, 2023.
- 12) **K. P. Josey**[†], S. Delaney[†], P. deSouza, X. Wu, R. Nethery, F. Dominici & D. Braun. (2023). Air Pollution and Mortality at the Intersection of Race and Social Class. *New England Journal of Medicine*, 388 (15): 1396-404, 2023.
- 13) **K. P. Josey**, P. deSouza, X. Wu, D. Braun & R. Nethery. Estimating a causal exposure response function with a continuous error-prone exposure: A study of fine particulate matter and all-cause mortality. *Journal of Agricultural, Biological and Environmental Statistics*, 28(1): 20-41, 2023.
- 14) **K. P. Josey**, B. M. Ringham, A. E. Barón, M. Schenkman, K. A. Sauder, K. E. Muller, D. Dabelea & D. H. Glueck. Power for balanced linear mixed models with complex missing data processes. *Communications in Statistics-Theory and Methods*, 52 (1), 46-64, 2023.
- 15) S. Zuo, **K. Josey**, S. Raghavan, F. Yang, E. Juarez-Colunga & D. Ghosh. Transportability methods for time-to-event outcomes: Application in adjuvant colon cancer trials. *JCO: Clinical Cancer Informatics*, 6, e2200088.
- 16) **K. P. Josey**, F. Yang, D. Ghosh & S. Raghavan. A calibration approach to transportability and data-fusion with observational data. *Statistics in Medicine*, 41 (23): 4511-4531, 2022.
- 17) J. Edwards, **K. Josey**, G. Bahn, L. Caplan, J. E. B. Reusch, P. Reaven, D. Ghosh & S. Raghavan. Heterogeneous treatment effects of intensive glycemic control on major adverse cardiovascular events in the ACCORD and VADT Trials: A machine-learning analysis. *Cardiovascular Diabetology*, 21 (58): 1-11, 2022.

- 18) S. Raghavan, T. Warsavage, W. G. Liu, K. Raffle, **K. Josey**, ... & J. E. B. Reusch. Trends in timing of and glycemia at initiation of second-line type 2 diabetes treatment in US adults. *Diabetes Care*, 45 (6): 1335-1345, 2022.
- 19) S. Raghavan, **K. Josey**, G. Bahn, D. Reda, S. Basu, S. A. Berkowitz, ... & D. Ghosh. Generalizability of heterogeneous treatment effects based on causal forests applied to two randomized clinical trials of intensive glycemic control. *Annals of Epidemiology*, 65: 101-108, 2021.
- 20) X. Zhou†, **K. Josey**†, L. Kamareddine, M. C. Caine, T. Liu, L. J. Mickley, M. Cooper & F. Dominici. Excess of COVID-19 cases and deaths due to fine particulate matter exposure during the 2020 wildfires in the United States. *Science Advances*, 7 (33): eabi8789, 2021.
- 21) **K. P. Josey**, E. Juarez-Colunga, F. Yang & D. Ghosh. A framework for covariate balance using Bregman distances. *Scandinavian Journal of Statistics*, 48 (3): 790–816, 2021.
- 22) **K. P. Josey**, S. A. Berkowitz, D. Ghosh & S. Raghavan. Transporting experimental results with entropy balancing. *Statistics in Medicine*, 40 (19): 4310–4326, 2021.
- 23) S. Basu, M. Akers, S. A. Berkowitz, **K. Josey**, D. Schillinger & H. Seligman. Comparison of fruit and vegetable intake among urban low-income US adults receiving a produce voucher in 2 cities. *JAMA Network Open*, 4 (3): e211757–e211757, 2021.
- 24) J. A. Valle, **K. Josey**, A. F. Prouse, J. Zimmet & S. W. Waldo. Dual antiplatelet therapy in non-ST elevation acute coronary syndromes at Veterans Affairs Hospitals. *Heart*, 105 (20): 1575–1582, 2019.
- 25) J. A. Gutierrez, D. L. Bhatt, S. Banerjee, T. J. Glorioso, **K. P. Josey**, R. V. Swaminathan, ... & S. W. Waldo, S. V. Rao Risk of obstructive coronary artery disease and major adverse cardiac events in patients with noncoronary atherosclerosis: Insights from the Veterans Affairs Clinical Assessment, Reporting, and Tracking (CART) program. *American Heart Journal*, 213: 47–56, 2019.
- 26) A. C. Sawant, **K. Josey**, M. E. Plomondon, T. M. Maddox, A. Bhardwaj, V. Singh, ... & J. Corbelli. Temporal trends, complications, and predictors of outcomes among nonagenarians undergoing percutaneous coronary intervention: Insights from the Veterans Affairs Clinical Assessment, Reporting, and Tracking program. *JACC: Cardiovascular Interventions*, 10 (13): 1295–1303, 2017.

PREPRINTS

- 1) E. Cruz-Cortes, **K. P. Josey**, F. Yang, D. Ghosh. An Empirical Process Framework for Covariate Balance in Causal Inference. arXiv: 2301.00889.
- 2) K. Barnatchez, R. Nethery, B. E. Shepherd, G. Parmigiani, **K. P. Josey**. Flexible and Efficient Estimation of Causal Effects with Error-Prone Exposures: A Control Variates Approach for Measurement Error. arXiv: 2410.12590.
- 3) Z. Haskell-Craig, **K. P. Josey**, P. L. Kinney, P. deSouza. Equity in the Distribution of Regulatory PM_{2.5} Monitors. arXiv: 2410.18692
- 4) L. Mock, R. C. Nethery, P. Gandhi, A. Parthasarathi, M. Rua, D. Robinson, ... & **K. Josey** (2025). An investigation of air pollution-induced temperature sensitivity and susceptibility to heat-related hospitalization in the Medicare population. *arXiv preprint arXiv:2505.07662*.

- 5) **K. P. Josey**, W. Liu, T. Warsavage, M. Medici, K. Kvist, C. G. Derington, ... & S. Raghavan (2025). Real-world cardiovascular effects of liraglutide: transportability analysis of the LEADER trial. *medRxiv*, 2025-05.
- 6) K. Barnatchez, **K. P. Josey**, N. S. Hejazi, B. E. Shepherd, G. Parmigiani, & R. Nethery (2025). Efficient Estimation of Causal Effects Under Two-Phase Sampling with Error-Prone Outcome and Treatment Measurements. *arXiv preprint arXiv:2506.21777*.

Grant Support

- 1) **Title:** Multi-year study to determine the causal link between HEPA-filtered/unfiltered indoor air quality in occupied classroom (K-12) settings and human respiratory disease outcomes
Source: Centers for Disease Control, 15% Salary Support 75D30123C17606
Role: Co-Investigator (Multi-PI: Thomas Jaenisch, MD PhD; Mark Hernandez, PhD)
Period: 09/2023-04/2026
- 2) **Title:** Intergovernmental Personnel Agreement
Source: US Department of Veterans Affairs 554D55021
Role: Principal Investigator, 50% Salary Support
Period: 11/2023-10/2025
- 3) **Title:** Air pollutants, heat exposure, and kidney health: A longitudinal study in women in Central America
Source: NIEHS R01 ES034042
Role: Co-Investigator, 10% Salary Support (PI: Lee Newman, MD PhD)
Period: 04/2023 – 01/2028

Talks and Posters

INVITED TALKS

- 1) “Balancing Weights for Evaluating Policy Interventions” Western North America Region of the International Biometric Society, June 2024.
- 2) “Measurement Error in Causal Inference”
 - a. Colorado School of Public Health Biostatistics Seminar, November 2023.
 - b. Oregon State University Department of Statistics, April 2024.
 - c. Columbia University Department of Biostatistics, September 2024.
 - d. Colorado State University Department of Statistics, October 2024.
- 3) “Average Treatment Effects for Whom?: Intersectional Risk Differences for PM_{2.5}-attributable Mortality” Kauvar Symposium at National Jewish Health, October 2023.
- 4) “Trial Emulation with Environmental Exposures” Society for Epidemiological Research, June 2023.
- 5) “Modeling Exposure Response Functions Associating Fine Particulate Matter Exposures with

Count Outcomes: Applications and Extensions”

- a. National Studies on Air Pollution and Health Working Group, May 2021.
 - b. University of Colorado ACCORDS Seminar, October 2021.
 - c. University of Utah Department of Population Health Sciences, December 2022.
 - d. University of Massachusetts Amherst Department of Biostatistics, December 2022.
 - e. Fred Hutchinson Cancer Center Vaccine and Infectious Diseases Division, December 2022.
 - f. Colorado School of Public Health Biostatistics Seminar, January 2023.
- 6) “Transporting observational and experimental treatment effects across populations”
 - a. Joint Initiative on Causal Inference, UC Berkeley - Novo Nordisk A/S, May 2022.
 - b. US Air Force Academy Department of Mathematical Science, October 2022.
 - 7) “Sufficient cause interactions between fine particulate matter exposure and corticosteroids on cardiovascular hospitalizations in Medicare beneficiaries with high-risk chronic conditions” National Studies on Air Pollution and Health Monthly Meeting, November 2021.
 - 8) “Excess of COVID-19 cases and deaths due to fine particulate matter exposure during the 2020 wildfires in the United States” Colorado School of Mines Emerging Scholar Seminar Series, April 2021.

CONTRIBUTED TALKS

- 1) “Balancing Weights for Evaluating Policy Interventions” Joint Statistical Meeting, August 2024
- 2) “Synergistic effects of PM_{2.5} and use of corticosteroids on cardiovascular and thromboembolic events among older adults” International Conference on Pharmacoepidemiology, August 2022.
- 3) “Estimating a causal exposure-response function with a continuous error-prone exposure: A study of fine particulate matter and all-cause mortality” Joint Statistical Meeting, August 2021.
- 4) “Extending inferences of experimental results with entropy balancing”
 - a. Western North America Region of the International Biometric Society, June 2020.
 - b. Society for Epidemiological Research, December 2020.

POSTERS

- 1) “Measurement Error Correction in Causal Inference: A Review” American Causal Inference Conference, May 2024.
- 2) “Transporting results of an observational study using calibration estimators” American Causal Inference Conference, May 2022.
- 3) “Independent and synergistic effects of systemic corticosteroid use and air pollution on thromboembolic events: A climate-drug interaction study” International Conference on Pharmacoepidemiology, August 2021.
- 4) “A Framework for Covariate Balance using Bregman Distances”
 - a. Atlantic Causal Inference Conference, May 2019.
 - b. Joint Statistical Meeting, August 2019.

Awards

Strother Walker Award for Outstanding Ph.D. Student Department of Biostatistics & Informatics - Colorado School of Public Health	April 2020
Maurice Davies Award for Outstanding Student American Statistical Association - Colorado/Wyoming Chapter	April 2018
Eagle Scout Boy Scouts of America - Indian Peaks District of the Longs Peak Council	November 2007

Professional Service

JOURNAL REVIEWING

American Journal of Epidemiology
Annals of Applied Statistics
Biometrics
Biostatistics
Electronic Journal of Statistics
Environmental Epidemiology
Environmental Research
Environmental Science & Technology
Journal of Computational and Graphical Statistics
Journal of Causal Inference
Nature Communications
New England Journal of Medicine
Statistics in Medicine

INSTITUTIONAL COMMITTEES

Environmental and Occupational Health Chair Hiring Committee
Biostatistics Preliminary Exam Committee
Biostatistics Qualifying Exam Committee
Biostatistics Admissions Committee

PROFESSIONAL MEMBERSHIPS

American Statistical Association – Colorado/Wyoming Chapter
International Biometric Society – Western North American Region
International Society for Environmental Epidemiology

❖ Last modified on July 1st, 2025 ❖