Kevin P. Josey, Ph.D.

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

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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

Publications

JOURNAL ARTICLES

1) J. O. Klompmaker, 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.

2) 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)*

3) 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.

4) 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.

5) 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.

6) 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.

7) **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.

8) 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.

9) **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.

10) **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.

11) **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.

12) 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.

13) **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.

14) 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.

15) 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.

16) 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.

17) 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.

18) **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.

19) **K. P. Josey**, S. A. Berkowitz, D. Ghosh & S. Raghavan. Transporting experimental results with entropy balancing. *Statistics in Medicine*, 40 (19): 4310–4326, 2021.

20) 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.

21) 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.

22) 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.

23) 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.

IN PREPRINT

1) E. Cruz-Cortes, **K. P. Josey**, F. Yang, D. Ghosh. An Empirical Process Framework for Covariate Balance in Causal Inference. arXiv: 2301.00889.

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" Oregon State Statistics Seminar Series, April 2024.

3) "Measurement Error in Causal Inference" CSPH Biostatistics Seminar Series, November 2023.

4) "Average treatment effects for whom?: Intersectional risk differences for $PM_{2.5}$-attributable mortality" Kauvar Symposium at National Jewish Health, October 2023.

5) "Trial Emulation with Environmental Exposures" Society for Epidemiological Research, June 2023

6) "Transporting observational and experimental treatment effects across populations" Joint Initiative on Causal Inference, UC Berkeley - Novo Nordisk A/S, May 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) "Estimating a causal exposure response function with a continuous error-prone exposure and excess COVID-19 cases and deaths due to fine particulate matter exposure" University of Colorado ACCORDS Seminar Series, October 2021.

9) "Estimating a causal exposure response function with a continuous error-prone exposure: A study of fine particulate matter and all-cause mortality" National Studies on Air Pollution and Health Monthly Meeting, May 2021.

10) "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" Society for Epidemiological Research, December 2020.

5) "Transporting experimental results with entropy balancing" Western North America Region of the International Biometric Society, June 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" Joint Statistical Meeting, August 2019.

5) "A framework for covariate balance using Bregman distances" Atlantic Causal Inference Conference, May 2019.

Awards

Strother Walker Award for Outstanding Ph.D. Student   April 2020
Department of Biostatistics & Informatics - Colorado School of Public Health

Maurice Davies Award for Outstanding Student   April 2018
American Statistical Association - Colorado/Wyoming Chapter

Eagle Scout   November 2007
Boy Scouts of America - Indian Peaks District of the Longs Peak Council

Professional Service

JOURNAL REVIEWING

Annals of Applied Statistics

Biostatistics (x2)

Biometrics (x3)

Electronic Journal of Statistics (x2)

Environmental Epidemiology

Environmental Science & Technology

Nature Communications

Journal of Computational and Graphical Statistics

Statistics in Medicine (x2)

INSTITUTIONAL COMITTEES

Hiring Committee Environmental and Occupational Health Chair

Biostatistics Preliminary Exam Committee

Biostatistics Qualifying Exam Committee

PROFESSIONAL MEMBERSHIPS

American Statistical Association – Colorado/Wyoming Chapter

International Biometric Society – Western North American Region

Society for Epidemiological Research

❖ Last modified on July 31st, 2024 ❖