RACHEL C. NETHERY

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EDUCATION

Ph.D. in Biostatistics August 2017
University of North Carolina at Chapel Hill (UNC-CH)

A.B. in Mathematics and Government May 2012
Georgetown University
GPA: 3.76/4.00
Honors: *Magna cum laude*

PROFESSIONAL EXPERIENCE

Associate Professor July 2025 - Present
Department of Biostatistics, Harvard T.H. Chan School of Public Health (HSPH)

Assistant Professor July 2019 - Present
Department of Biostatistics, Harvard T.H. Chan School of Public Health (HSPH)

Postdoctoral Research Fellow June 2017 - June 2019
Department of Biostatistics, HSPH
Mentor: Dr. Francesca Dominici

Statistical Research Assistant July 2015 - June 2017
Department of Biostatistics, UNC-CH
Mentor: Dr. Amy Herring

National Institutes of Health Summer Internship Program May 2016 - August 2016
Epidemiology Branch, National Institute of Environmental Health Sciences
Mentor: Dr. Richard Kwok

Statistical Trainee August 2012 - August 2015
Department of Biostatistics, UNC-CH
National Institute of Environmental Health Sciences Training Grant
Mentor: Dr. Amy Herring

Statistical Research Assistant August 2011 - August 2012
McDonough School of Business, Georgetown University
Mentor: Dr. Korok Ray

TEACHING EXPERIENCE

Instructor, BIOSTAT 232: Methods Fall 2022, Fall 2023, Fall 2024
Department of Biostatistics, HSPH

Instructor, BST 263: Statistical Learning Spring 2021, Spring 2022
Department of Biostatistics, HSPH

Tutor for Doctoral Applied Qualification Exam November 2014 - July 2015
Department of Biostatistics, UNC-CH

Grader, Causal Inference January 2015 - May 2015
Department of Biostatistics, UNC-CH

Grader, Principles of Statistical Inference (Online) August 2014 - December 2014
Department of Biostatistics, UNC-CH

Teaching Assistant, Principles of Statistical Inference August 2013 - December 2013
Department of Biostatistics, UNC-CH

Creator and Instructor of Online R Courseware May 2013 - August 2013
McDonough School of Business, Georgetown University

ACADEMIC AWARDS & HONORS

2023 Rosenblith New Investigator Award
Health Effects Institute

2017 American Statistical Association Student Paper Competition Winner
Government Statistics and Social Statistics Section

Special Commendation for Outstanding Qualifying Exam Performance
For receiving the top score on the applied qualifying exam in 2014
Department of Biostatistics, UNC-CH

Graduate Student Summer Intern Poster Competition Winner
National Institute of Environmental Health Sciences

Fryer Fellowship
Department of Biostatistics, UNC-CH

Pi Mu Epsilon National Honorary Mathematics Society
Department of Mathematics, Georgetown University

Outstanding First Year Math Student Award
Department of Mathematics, Georgetown College

Valedictorian
Anderson County High School, Lawrenceburg, Kentucky

PUBLICATIONS

† indicates co-first or co-senior authorship

Underline indicates a student or postdoctoral advisee

I. Journal Articles

1. Link N.B., Gopaluni A., Fulcher I., Boley E.J., **Nethery R.C.**, Hedt-Gauthier B. (2025). Spatiotemporal methods to handle missing data in syndromic surveillance with applications to health management information system data. *Spatial and Spatiotemporal Epidemiology 54:* 100736.

2. du Plessis J., DesRoche C., Delaney S., **Nethery R.C.**, Hong R., Thavendiranathan P., Ross H., Hanneman K. (2025). Association between Long-Term Ambient Air Pollution and Myocardial Fibrosis Assessed by Cardiac MRI. *Radiology 316(1):* e250331.

3. Fiffer M.R., James P., Chen J., Iyer H.S., Holland I., Roscoe C., Wilt G., **Nethery R.C.**, Sun Q., Laden F., Hart J.E. (2025). Residential greenness and diabetes incidence in two prospective cohorts of U.S. women. *Environmental Epidemiology 9(4):* e405.

4. Aggarwal S., Hu J.K., Sullivan J.A., Parks R.M., **Nethery R.C.** (2025). Severe flooding and cause-specific hospitalization in the United States. *Lancet Planetary Health 9(7):* 101268.

5. Chen N., McGee E.E., **Nethery R.C.**, Mucci L.A., Dickerman B.A. (2025). Guideline-based physical activity and health-related quality of life among prostate cancer survivors: a target trial emulation in the Health Professionals Follow-up Study. *American Journal of Epidemiology,* kwaf117. Online: `https://doi.org/10.1093/aje/kwaf117`

6. Fiffer M., Chen J., Silva E.L., **Nethery R.C.**, Sun Q., James P., Grady S.T., Yanosky J.D., Kaufman J.D., Laden F., Hart J.E. (2025). Long-term Exposure to Air Pollution and Incidence of Type 2 Diabetes in the Nurses' Health Study and Nurses' Health Study II. *Environmental Health Perspectives 133(6):* 067009.

7. Peterson E., **Nethery R.C.**, Chen J.T., Tabb L.P., Coull B.A., Piel F.B., Waller L.A. (2025). A Bayesian spatial measurement error approach to incorporate heterogeneous population-at-risk uncertainty in estimating small-area opioid mortality rates. *Spatial and Spatiotemporal Epidemiology 53:* 100719.

8. deSouza P.N., Shea A.A., Vitzthum V.J., Duarte F., Gorman C., Timmons M., Huguelet P., Sammel M.D., Ratti C., Braun D., **Nethery R.C.** (2025). Evidence of air pollution effects on menstrual cycle health using multi-country data from a mobile health app. *Lancet Planetary Health 9(5):* e364-e373.

9. Vega S.L., Childs M.L., Aggarwal S., **Nethery R.C.** (2025). Wildfire smoke exposure and cause-specific hospitalization in older adults. *JAMA Network Open 8(4):* e257956.

10. Vega S.L., **Nethery R.C.** (2024). Spatio-temporal quasi-experimental methods for rare disease outcomes: The impact of reformulated gasoline on childhood hematologic cancer. In press, *Journal of the Royal Statistical Society, Series A.* Online: `https://doi.org/10.1093/jrsssa/qnae109`*
    * **Winner of the 2024 New England Statistical Society Student Paper Competition**

11. Hanneman K., Taboun O., Kirpalani A., Ertl-Wagner B., Aguet J., Delaney S., **Nethery R.C.**, Choi J., Panet H., Brown M.J., Schmidt H., Kielar A., Patlas M. (2024). Excess Utilization of Emergency Department Medical Imaging Associated with Short Term Exposures to Ambient Heat and Particulate Air Pollution. *Radiology 313(2):* e241624.

12. Lynch V.D., Sullivan J., Flores A., Aggarwal S., **Nethery R.C.**, Kioumourtzoglou M.A., Nigra A.E., Parks R.M. (2025). Large floods drive changes in cause-specific mortality in the United States. *Nature Medicine 31:* 663–671.

13. Chen N., Hu C.R., Iyer H.S., James P., Dickerman B.A., Mucci L.A., **Nethery R.C.** (2024). Neighborhood greenness and long-term physical and psychosocial quality of life among prostate cancer survivors in the Health Professionals Follow-up Study. *Environmental Research 262:* 119847.

14. Bhaskar S., Shapero A., Chen F., Chu M.T., **Nethery R.C.**, Hart J.E., Adamkiewicz G. (2024). Algorithm-driven estimation of household cooking activity and its impact on indoor $PM_{2.5}$ assessment. *Indoor Environments 1(3):* 100032.

15. Chen N., McGrath C.B., Stopsack K.H., Morgans A.K., **Nethery R.C.**, Dickerman B.A., Mucci L.A. (2024). Social integration and long-term physical and psychosocial quality of life among prostate cancer survivors in the Health Professionals Follow-up Study. In press, *Journal of Cancer Survivorship.* Online: `https://doi.org/10.1007/s11764-024-01632-0`.

16. Klompmaker J., Laden F., Dominici F., James P., Josey K., Kaufman J., **Nethery R.C.**, Rimm E., Roscoe C., Wilt G., Yanosky J., Zanobetti A., Hart J. (2024). Long-term exposure to air pollution, greenness and temperature and survival after a nonfatal myocardial infarction. *Environmental Pollution:* 124236.

17. Visaria A., Kang E., Parthasarathi A., Robinson D., Read J., **Nethery R.C.**, Josey K., Gandhi P., Bates B., Rua M., Ghosh A.K., 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.

18. Fayyad R., Josey K., Gandhi P., Rua M., Visaria A., Bates B., Setoguchi S., **Nethery R.C.** (2024). Air pollution and serious bleeding events in high-risk older adults: a retrospective cohort study. *Environmental Research 251(1):* 118628.

19. Coffman E., Rappold A.G., **Nethery R.C.**, Anderton J., Amend M., Jackson M.G., Roman H., Fann N., Baker K.R., Sacks J.D. (2024). Quantifying Multipollutant Health Impacts using the Environmental Benefits Mapping and Analysis Program – Community Edition (BenMAP – CE): A Case Study in Atlanta, Georgia. *Environmental Health Perspectives 132(3):* 037003.

20. Rushovich T., **Nethery R.C.**, White A., Krieger N. (2024). Gerrymandering and the packing and cracking of medical uninsurance rates in the United States. *Journal of Public Health Management & Practice 30(6):* 832-843.

21. Peterson E.N., **Nethery R.C.**, Padellini T., Chen J.T., Coull B.A., Piel F.B., Wakefield J., Blangiardo M., Waller L.A. (2024). A Bayesian hierarchical small-area population model accounting for data source specific methodologies from American Community Survey, Population Estimates Program, and Decennial Census data. *Annals of Applied Statistics 18(2):* 1565-1595.

22. Visaria A., Robinson D., Read J., **Nethery R.C.**, Josey K., Gandhi P., Bates B., Rua M., Setoguchi S. (2024). Ambient heat and risk of serious hypoglycemia in older adults with diabetes using insulin in the U.S. and Taiwan: A cross-national case crossover study. *Diabetes Care 47(2):* 233–238.

23. Rushovich T., **Nethery R.C.**, White A., Krieger N. (2024). Voting for survival: Impact of the US Voting Rights Act of 1965 on Black and Black vs. White infant death rates in Jim Crow States, 1959-1980. *American Journal of Public Health 114(3):* 300–308.

24. Fiffer M.R., Li H., Iyer H.S., **Nethery R.C.**, Sun Q., James P., Yanosky J.D., Kaufman J.D., Laden F., Hart J.E. (2023). Associations between air pollution, residential greenness, and glycated hemoglobin (HbA1c) in three prospective cohorts of U.S. adults. *Environmental Research 239*: 117371.

25. Borchert W., Grady S.T., Chen J., DeVille N.V., Roscoe C., Chen F., Mita C., Holland I., Wilt G.E., Hu C.R., Mehta U., **Nethery R.C.**, Albert C.M., Laden F., Hart J.E. (2023). Air pollution and temperature: a systematic review of ubiquitous environmental exposures and sudden cardiac death. *Current Environmental Health Reports 10*: 490–500.

26. Josey K., **Nethery R.C.**, Visaria A., Bates B., Gandhi P., Rua M., Robinson D., Setoguchi S. (2023). Retrospective cohort study investigating synergism of air pollution and corticosteroid exposure in promoting cardiovascular and thromboembolic events in older adults. *BMJ Open 13(9)*: e072810.

27. Li Y., Coull B.A., Krieger N., Peterson E., Waller L.A., Chen J.T., **Nethery R.C.** (2023). Impacts of census differential privacy for small-area disease mapping to monitor health inequities. *Science Advances 9(33)*: eade8888.

28. Chowdhury-Paulino I.M., Hart J.E., James P., Iyer H., Wilt G.E., Booker B., **Nethery R.C.**, Laden F., Mucci L.A., Markt S.C. (2023). Association between outdoor light at night and prostate cancer in the Health Professionals Follow-Up Study. *Cancer Epidemiology Biomarkers & Prevention 32(10)*: 1444-1450.

29. Rasel M.M., Chen K.L., **Nethery R.C.**, Henneman L. (2023). COVID-19 and beyond: COVID-19 interventions and power plant emissions in the United States. *Environmental Science & Technology Engineering 3(7)*: 923–931.

30. Josey K., Delaney S., Wu X., **Nethery R.C.**, deSouza P., Braun D., Dominici F. (2023). Air pollution and mortality at the intersection of race and social class. *New England Journal of Medicine 388(15)*: 1396-1404.

31. Considine E.M., Hao J., deSouza P., Braun D., Reid C.E., **Nethery R.C.** (2023). Evaluation of model-based $PM_{2.5}$ estimates for exposure assessment during wildfire smoke episodes in the western U.S. *Environmental Science & Technology 57(5):* 2031–2041.

32. Considine E.M., Braun D., Kamareddine L., **Nethery R.C.**†, deSouza P†. (2023). Investigating use of low-cost sensors to increase accuracy and equity of real-time air quality information.*Environmental Science & Technology 57(3):* 1391–1402.

33. **Nethery R.C.**, Vega S., Frazier A.L., Laden F. (2023). Mobile source benzene regulations and risk of childhood and young adult hematologic cancers in Alaska: a quasi-experimental study. *Epidemiology 34(3)*: 385-388.

34. Braun L.M., Le H., Voulgaris C.T., **Nethery R.C.** (2023). Who benefits from shifting metal to pedal? An equity-oriented health impact assessment for analyzing the health tradeoffs of cycling. *Transportation Research Part D 115*: 103540.

35. Engel S.M., Villanger G.D., Herring A.H., **Nethery R.C.**, Drover S., Zoeller R.T., Meltzer H.M., Zeiner P., Knudsen G.P., Reichborn-Kjennerud T., Longnecker M.P., Aase H. (2022). Gestational thyroid hormone concentrations and risk of Attention-Deficit Hyperactivity Disorder in the Norwegian Mother and Child Cohort Study. *Paediatric and Perinatal Epidemiology 37*: 218- 228.

36. **Nethery R.C.**, Josey K., Gandhi P., Kim J.H., Visaria A., Bates B., Schwartz J., Robinson D., Setoguchi S. (2023). Air pollution and cardiovascular and thromboembolic events in older adults with high-risk conditions. *American Journal of Epidemiology 192(8)*: 1358–1370.

37. Josey K., deSouza P., Wu X., Braun D.†, **Nethery R.C.**† (2023). 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:* 20-41.

38. Li H., Hart J.E., Mahalingaiah S., **Nethery R.C.**, Bertone-Johnson E., Eliassen A.H., Laden F. (2022). Environmental exposures and anti-Mullerian hormone: a mixture analysis in the Nurses' Health Study II. *Epidemiology 34(1):* 150-161.

39. Gripper A., **Nethery R.C.**, Cowger T., White M.M., Kawachi I., Adamkiewicz G. (2022). Community solutions to food apartheid: A spatial analysis of community food-growing spaces and neighborhood demographics in Philadelphia. *Social Science and Medicine 310:* 115221.

40. Parks R.M., Benavides J., Anderson G.B., **Nethery R.C.**, Navas-Acien A., Dominici F., Ezzati M., Kioumourtzoglou M.A. (2022). Tropical cyclones and cause-specific mortality in the United States. *JAMA 327(10)*: 946–955.

41. Pham P., Sharma M., Kayembe P., **Nethery R.C.**, Vinck P. (2022). Gender and ebola in Eastern Democratic Republic of the Congo: Pathways to protective behavioral outcomes during the 2018-2020 Ebola outbreak. *JAMA Network Open 5(2)*: e2147462.

42. **Nethery R.C.**, Chen J.T., Krieger N., Waterman P.D., Peterson E., Waller L.A., Coull B.A. (2022). Statistical implications of endogeneity induced by residential segregation in small-area modelling of health inequities. *The American Statistician 76(2)*: 142-151.

43. **Nethery R.C.**†, Katz-Christy N.†, Kiomourtzglou M.A., Parks R., Schumacher A., Anderson G.B. (2023). Integrated causal-predictive machine learning models for tropical cyclone epidemiology. *Biostatistics 24(2)*: 449-464.

44. Chen K.L., Henneman L.R.F., **Nethery R.C.** (2021). Differential impacts of COVID-19 lockdowns on $PM_{2.5}$ across the United States. *Environmental Advances 6*: 100122.

45. Kamai E.M., Villanger G.D., **Nethery R.C.**, Thomsen C., Sakhi A.K., Drover S.S.M., Hoppin J.A., Knudsen G.P., Reichborn-Kjennerud T., Zeiner P., Overgaard K., Herring A.H., Aase H., Engel S.M. (2021). Gestational phthalate exposure and preschool Attention Deficit Hyperactivity Disorder in Norway. *Environmental Epidemiology 5(4)*: e161.

46. Li H., Hart J.E., Mahalingaiah S., **Nethery R.C.**, Bertone-Johnson E., Laden F. (2021). Ultraviolet radiation and age at natural menopause in a nationwide, prospective US female cohort. *Environmental Research 203*: 111929.

47. Braun L.M., Le H., Voulgaris C.T., **Nethery R.C.** (2021). Healthy for whom? Equity in the spatial distribution of cycling risks. *Journal of Transport & Health 23*: 101227.

48. Li H., Hart J.E., Mahalingaiah S., **Nethery R.C.**, James P., Bertone-Johnson E., Laden F. (2021). Associations of long-term exposure to environmental noise and outdoor light at night with age at natural menopause in a US women cohort. *Environment International 5(3)*: e154.

49. Choi G., Keil A.P., Villanger G.D., Richardson D.B., Daniels J.L., Hoffman K., Sakhi A.K., Thomsen C., Herring A.H., Drover S.S.M., **Nethery R.C.**, Aase H., Engel S.M. (2021). Pregnancy exposure to common-detect organophosphate esters and phthalates and maternal thyroid function. *Science of Total Environment 782*: 146709.

50. **Nethery R.C.**†, Rusovich T.†, Peterson E., Chen J., Waterman P., Krieger N., Waller L., Coull B. (2021). Comparing denominator sources for real-time disease incidence modeling: American Community Survey and WorldPop. *Social Science and Medicine- Population Health 14*: 100786.

51. Chao A., Picard M.H., Passeri J.J., Cui J., **Nethery R.C.**, Wasfy J.H. (2021). Effect of availability of transcatheter aortic-valve implantation on survival for all patients with severe aortic stenosis. *American Journal of Cardiology 149*: 72-77.

52. Choi G., Villanger G.D., Drover S.M., Sakhi A.K., Thomsen C., **Nethery R.C.**, Hoppin J.A., Zeiner P., Knudsen G.P., Reichborn-Kjennerud T., Øvergaard K.R., Herring A.H., Skogan A.H., Biele G., Aase H., Engel S.M. (2021). Prenatal phthalate exposures and executive function in preschool children. *Environment International 149*: 106403.

53. Parks R.M., Anderson G.B., **Nethery R.C.**, Navas-Acien A., Dominici F., Kioumourtzoglou M.A. (2021). Tropical cyclone exposure is associated with increased hospitalization rates in older adults. *Nature Communications 12(1)*: 1-12.

54. Krieger N., **Nethery R.C.**, Chen J.T., Waterman P.D., Wright E., Rushovich T, Coull B. (2021). Impact of differential privacy and small numbers on the monitoring of health inequities using US census tract sources. *American Journal of Public Health 111 (2)*: 265-268.

55. Li H., Hart J.E., Mahalingaiah S., **Nethery R.C.**, Bertone-Johnson E., Laden F. (2020). Long-term exposure to particulate matter and roadway proximity with age at natural menopause in the Nurses' Health Study II Cohort. *Environmental Pollution 269*, 116216.

56. Yitshak Sade M., **Nethery R.C.**, Schwartz J.D., Mealli F., Dominici F., Di Q., Abu Awad Y., Ifergane G., Zanobetti A. (2020). The causal effect of PM2.5 exposure on hospital admissions among Medicare enrollees with chronic debilitating brain disorders: A national study. *Science of the Total Environment 755(2)*, 142524.

57. Wu X.†, **Nethery R.C.**†, Sabath M.B., Braun D., Dominici F. (2020). Air pollution and COVID-19 mortality in the United States: strengths and limitations of an ecological regression design. *Science Advances 6(45)*, eabd4049.

58. **Nethery R.C.**, Mealli F., Sacks J., Dominici F. (2020). Evaluation of the health impacts of the 1990 Clean Air Act Amendments using causal inference and machine learning. *Journal of the American Statistical Association 116(535)*, 1128-1139.

59. Yitshak Sade M., **Nethery R.C.**, Abu Awad Y., Mealli F., Dominici F., Zanobetti A. (2020). Lowering air pollution levels in Massachusetts may prevent cardiovascular hospital admissions. *Journal of the American College of Cardiology 75(20)*, 2642-2644.

60. **Nethery R.C.**, Yang Y., Brown A., Dominici F. (2020). A causal inference framework for cancer cluster investigations using publicly available data. *Journal of the Royal Statistical Society, Series A 183(3)*, 1253-1272.

61. Villanger G.D., Drover S., **Nethery R.C.**, Thomsen C., Sakhi A.K., Overgaard K.R., Zeiner P., Hoppin J., Reichborn-Kjennerud T., Aase H., Engel S.M. (2020). Associations between urine phthalate metabolites and thyroid function in pregnant women and the influence of iodine status. *Environment International 137*, 105509.

62. **Nethery R.C.**, Mealli F., Dominici F. (2019). Estimating population average causal effects in the presence of non-overlap: The effect of natural gas compressor station exposure on cancer mortality. *Annals of Applied Statistics 13(2)*, 1242-1267.

63. **Nethery R.C.**, Dominici F. (2019). Estimating pollution-attributable mortality at the regional and global scales: Challenges in uncertainty estimation and causal inference. *European Heart Journal 40(20)*, 1597-1599.

64. **Nethery R.C.**, Sandler D.P., Zhao S., Engel L.S., Kwok R.K. (2019). A joint spatial factor analysis model to accommodate data from misaligned areal units with application to Louisiana social vulnerability. *Biostatistics 20(3)*: 468-484.*
*** Winner of 2017 American Statistical Association Student Paper Competition**

65. Engel S.M., Villanger G.D., **Nethery R.C.**, Thomsen C., Sakhi A.K., Drover S., Hoppin J., Zeiner P., Knudsen G.P., Reichborn-Kjennerud T., Herring A.H., Aase H. (2018). Prenatal phthalates, maternal thyroid hormones, and risk of Attention-Deficit Hyperactivity Disorder in the Norwegian Mother and Child Cohort. *Environmental Health Perspectives 126(5).*

66. Grace M.R., Vladutiu C.J., **Nethery R.C.**, Siega-Riz A.M., Manuck T.A., Herring A.H., Savitz D., Thorp J.T. (2018). Lipoprotein particle concentration measured by nuclear magnetic resonance spectroscopy and preterm birth: A prospective cohort study. *BJOG: An International Journal of Obstetrics and Gynaecology 125*, 895-903.

67. Rowell T.R., Reeber S.L., Lee S.L., Harris R.A., **Nethery R.C.**, Herring A.H., Glish G.L., Tarran R. (2017). E-cigarette liquids reduce proliferation and viability in the CALU3 airway epithelial cell line. *American Journal of Physiology- Lung Cellular and Molecular Physiology 313(1)*, L52-L66.

68. Ghosh A., **Nethery R.C.**, Herring A.H., Tarran R. (2017). Flavored little cigar smoke induces cytotoxicity and apoptosis in airway epithelia. *Cell Death Discovery 3*: 17019. Published online 2017 April 24. doi:10.1038/cddiscovery.2017.19

69. **Nethery R.C.**, Warren J.L., Herring A.H., Moore K.A.B., Evenson K.R., Diez-Roux A.V. (2015). A common spatial factor analysis model for measured neighborhood-level characteristics: The Multi-Ethnic Study of Atherosclerosis. *Health & Place 36*, 35-46.

II. Conference Publications

70. Considine E.M., **Nethery R.C.**, Wellenius G.A., Dominici F., Tec M. (2024). Optimizing Heat Alert Issuance with Reinforcement Learning. *Proceedings of the AAAI Conference on Artificial Intelligence 39(27):* 27922-27931.*
    * **Winner of the 2024 American Statistical Association Student Paper Competition**

71. **Nethery R.C.**, Truong, Y. (2018). On statistical inference for independent colored sources analysis. *ITISE 2018: International Conference on Time Series and Forecasting*, Granada, Spain.

SUBMITTED AND PRE-PRINT PAPERS

1. **Nethery R.C.**, Testa C., Tabb L.P., Hanage W.P., Chen J.T., Krieger N. Addressing spatial misalignment in population health research: a case study of US congressional district political metrics and county health data. Online: `https://doi.org/10.1101/2023.01.10.23284410`

2. Chen K.L., Bargagli Stoffi F.J., Kim R.C., **Nethery R.C.** Environmental justice implications of power plant emissions control policies: Heterogeneous causal effect estimation under bipartite network interference. Online: `https://arxiv.org/abs/2304.12500`

3. Chen K.L., Bargagli-Stoffi F.J., Kim R.C., Henneman L.R., **Nethery R.C.** Difference-in-differences under bipartite network interference: A framework for quasi-experimental assessment of the effects of environmental policies on health. Online: `http://arxiv.org/abs/2404.13442`

4. Considine E.M., **Nethery R.C.** A Spatiotemporal, Quasi-experimental Causal Inference Approach to Characterize the Effects of Global Plastic Waste Export and Burning on Air Quality Using Remotely Sensed Data. Online: `http://arxiv.org/abs/2503.04491`

5. Vega S.L., **Nethery R.C.** Evaluating Heterogeneity in the Impact of the Reformulated Gasoline Program on Childhood and Young Adult Lymphoma Incidence: A Bayesian Causal Inference Analysis.

6. Kim R.C., Bargagli-Stoffi F.J., Chen K.L., **Nethery R.C.** Towards Optimal Environmental Policies: Policy Learning under Arbitrary Bipartite Network Interference. Online: `http://arxiv.org/abs/2410.08362`

7. Lee J.J., Wu X., Dominici F., **Nethery R.C.** Causal exposure-response curve estimation with surrogate confounders: a study of air pollution and children's health in Medicaid claims data. Online: `https://arxiv.org/abs/2308.00812`

8. Barnatchez K., Josey K.P., Hejazi N.S., Shepherd B.E., Parmigiani G., **Nethery R.C.** Efficient Estimation of Causal Effects Under Two-Phase Sampling with Error-Prone Outcome and Treatment Measurements. Online: `https://arxiv.org/abs/2506.21777`

9. Barnatchez K., **Nethery R.C.**, Shepherd B.E., Parmigiani G., Josey K.P. Flexible and Efficient Estimation of Causal Effects with Error-Prone Exposures: A Control Variates Approach for Measurement Error. Online: `http://arxiv.org/abs/2410.12590`.

10. Vega S.L., **Nethery R.C.** Practical considerations for Gaussian Process modeling for causal inference quasi-experimental studies with panel data. Online: `https://arxiv.org/abs/2507.05128`

11. Mock L., **Nethery R.C.**, Gandhi P., Parthasarathi A., Rua M., Robinson D., Setoguchi S., Josey K. An investigation of air pollution-induced temperature sensitivity and susceptibility to heat-related hospitalization in the Medicare population. Online: `http://arxiv.org/abs/2505.07662`

12. Borchert W., **Nethery R.C.**, Albert C., Klompmaker J., Roscoe C., Wilt G., Laden F., Hart J. Medium- and long-term temperature and sudden cardiac death in a cohort of US women.

13. Huang S.P., Su C.C., Lin C.Y., **Nethery R.C.**, Josey K., Bates B., Robinson D., Gandhi P., Rua M., Parthasarathi A., Setoguchi S., Yang Y.H.K. Long-term exposure to high $PM_{2.5}$ concentrations and cardiovascular and thromboembolic events: A cohort study in Taiwan.

14. Borchert W., Wilt G.E., Hu C.R., Mehta U., Roscoe C., **Nethery R.C.**, Albert C.M., Hart J.E., Laden F. Altitude of Residence and Sudden Cardiac Death.

15. Huang S.P., Su C.C., **Nethery R.C.**, Josey K., Bates B., Robinson D., Gandhi P., Rua M., Parthasarathi A., Setoguchi S., Yang Y.H.K. A drug-environment interaction between high level $PM_{2.5}$ concentration and corticosteroid use on cardiovascular and thromboembolic events in older adults in Taiwan.

16. Aravena F.C., Ladak A.M., DesRoche C., Delaney S., **Nethery R.C.**, Thavendiranathan P., Ross H., Hanneman K. Sex-Specific Associations Between Long-term Air Pollution Exposure and Coronary Atherosclerosis on Cardiac CT.

TALKS

1. Introduction to processing and visualizing spatial data using R. CAFE University Climate and Health Research Coordinating Center Webinar Series, April 2025.

2. Wrangling & Processing Historic Weather Data for Climate and Health Studies. CAFE University Climate and Health Research Coordinating Center Webinar Series, July 2024.

3. Designing epidemiological studies to inform the NAAQS: Experiences studying air pollution, mortality, and inequalities using Medicare data. Health Effects Institute Annual Conference, April 2024.

4. Educational Demo- Introductory Lectures in Climate and Health Research. CAFE Climate and Health Conference 2024.

5. Causal exposure-response curve estimation with surrogate confounders: air pollution epidemiology using Medicaid claims. CMStatistics, December 2023.

6. Characterizing the health risks of severe storms and floods using causal inference and machine learning. ISEE early career researchers virtual meeting on environment, climate, and cancer, October 2023.

7. Estimating and forecasting the causal effects of extreme weather events on health. Tufts Medical Center Biomedical and Health Data Science Collaborative Seminar, July 2023.

8. Integrated Causal-Predictive Machine Learning Models for Tropical Cyclone Epidemiology. ENAR, March 2023.

9. Integrated Causal-Predictive Machine Learning Models for Tropical Cyclone Epidemiology. CMStatistics, December 2021.

10. Integrated Causal-Predictive Machine Learning Models for Tropical Cyclone Epidemiology. International Society of Environmental Epidemiology, Climate Change and Health Webinar Series, December 2021.

11. Designing Studies and Assessing Evidence for Causality in Environmental Pharmacoepidemiology. International Conference on Pharmacoepidemiology & Therapeutic Risk Management (ICPE), August 2021.

12. Mid-term $PM_{2.5}$ Exposure and Cardiovascular and Thromboembolic Hospitalizations in Medicare Beneficiaries with High-Risk Chronic Conditions. Society for Epidemiologic Research Annual Meeting, June 2021.

13. Integrated Causal-Predictive Machine Learning Models for Tropical Cyclone Epidemiology. Climate Change, Hurricanes, and Health. Boston University, April 2021.

14. A Causal Machine Learning Model for Identification of Communities facing the Highest Health Risks from an Impending Tropical Storm. IMT Lucca Data Science for Impact Evaluation Webinar, July 2020.

15. A Causal Inference Framework for Cancer Cluster Investigations using Publicly Available Data. Eastern North American Region of the International Biometrics Society (ENAR), March 2020.

16. A Causal Inference Approach to Evaluate the Health Impacts of Air Quality Regulations: The Health Benefits of the 1990 Clean Air Act Amendments. Biostatistics – Biomedical Informatics – Big Data Seminar, October 2019.

17. A Causal Inference Approach to Evaluate the Health Impacts of Air Quality Regulations: The Health Benefits of the 1990 Clean Air Act Amendments. University of Florence Department of Statistics, Informatics, Applications, June 2019.

18. A Causal Inference Approach to Evaluate the Health Impacts of Air Quality Regulations: The Health Benefits of the 1990 Clean Air Act Amendments. Atlantic Causal Inference Conference, May 2019.

19. A Causal Inference Approach to Evaluate the Health Impacts of Air Quality Regulations: The Health Benefits of the 1990 Clean Air Act Amendments. Harvard National Studies of Air Pollution and Health Seminar, May 2019.

20. A Causal Inference Framework for Cancer Cluster Investigations using Publicly Available Data. Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research, December 2018.

21. Estimating Population Average Causal Effects in the Presence of Non-Overlap. Harvard Data Science Initiative Conference, October 2018.

22. Estimating Population Average Causal Effects in the Presence of Non-Overlap: A Bayesian Approach. European Causal Inference Meeting, April 2018.

23. Estimating the Effect of Residential Greenspace Exposure on 30-Day Post-Stroke Outcomes in the Presence of Propensity Score Non-Overlap. Harvard National Studies of Air Pollution and Health Seminar, February 2018.

24. Estimating Population Average Causal Effects in the Presence of Non-Overlap: A Bayesian Approach. Harvard Biostatistics Environmental Statistics Seminar, January 2018.

25. Bootstrapping Measures of Uncertainty for EEG Resting State Connectivity Studies using Independent Component Analysis. Harvard Biostatistics Neuro-Statistics Working Group Seminar, November 2017.

26. A Joint Spatial Factor Analysis Model to Accommodate Data from Misaligned Nested Areal Units with Application to Louisiana Social Vulnerability. Joint Statistical Meetings, August 2017.

27. A Joint Spatial Factor Analysis Model to Accommodate Data from Misaligned Nested Areal Units with Application to Louisiana Social Vulnerability. National Institute of Environmental Health Sciences, Biostatistics and Computational Biology Branch Weekly Seminar Series, January 2017.

28. Bootstrap-Based Measures of Uncertainty for EEG Artifact Detection Using Independent Component Analysis with Colored Sources. International Chinese Statistical Association, Applied Statistics Symposium, June 2016.

ADVISING

I. Postdoc Advising

Kevin Chen (2024 – 2025)

Jie (Kate) Hu (2021 – 2024)

Jenny Lee (2022 – 2024)

Kevin Josey (2020 – 2023)

II. PhD Advising

Raphael Kim (2022 –)

Keith Barnatchez (2021 –)

Sarika Aggarwal (2021 –)

Nick Link (2022 – 2025)

Sofia Vega (2021 – 2025)

Ellen Considine (2021 – 2025)

Kevin Chen (2020 – 2024)

Jenny Lee (2019 – 2022)

II. Master's Advising

Annie Song (2025 –)

Bella Qian (2024 – 2025)

Rindala Fayyad (2022)

Yanran Li (2021 – 2022)

Jiayuan Hao (2021 – 2022)

David Hong (2020 – 2021)

Carol Wei (2020)

Yue Yang (2018 – 2019)

III. Undergraduate Advising

Nina Katz-Christy (2020 – 2022)

Anna (Jo) Brown (2018)

IV. Doctoral Committee Membership

Current

Michael Cork, Biostatistics, HSPH

Monica Robles Fontan, Biostatistics, HSPH

Joseph Wilson, Environmental Health, HSPH

Jennifer Rooney, Environmental Health, HSPH

Sanjana Bhaskar, Environmental Health, HSPH

Former

Christina Howe (2025), Biostatistics, HSPH

Dena Javadi (2025), Social and Behavioral Sciences, HSPH

Naiyu Chen (2024), Epidemiology, HSPH

Tamara Rushovich (2024), Social and Behavioral Sciences, HSPH

William Borchert (2023), Environmental Health, HSPH

Ilkania Chowdhury-Paulino (2023), Epidemiology, HSPH

Ashley Gripper (2022), Population Health Sciences, HSPH

Melissa Fiffer (2022), Environmental Health, HSPH

Tori Cowger (2021), Population Health Sciences, HSPH

Huichu Li (2021), Environmental Health, HSPH

Falco Bargagli Stoffi (2020), Data Science and Economics, IMT School for Advanced Studies

PROFESSIONAL AND SERVICE ACTIVITIES

Service Activities

Department

PhD/Academic Standing Committee

Doctoral Qualifying Exam Committee

PhD Admissions Committee

Master's Executive Committee

Faculty Mentor, Summer Program in Biostatistics & Computational Biology

Faculty Chair, Mental Health Working Group

Postdoc Committee

Environmental Statistics Seminar Organizer

School

Climate and planetary health concentration faculty advisory council member

Committee on the Advancement for Women Faculty member

External

ENAR Regional Committee

Health Effects Institute Reviewer

NIH Infectious Diseases, Reproductive Health, Asthma and Pulmonary Conditions (IRAP) Study Section Reviewer

ENAR Regional Advisory Board

Briefing of the House Select Committee on the Climate Crisis regarding research on the link between air pollution and COVID-19 mortality

Briefing of the UK All-Party Parliamentary Group on Air Pollution regarding research on the link between air pollution and COVID-19 mortality

Byar Award Review Committee, Biometrics Section, American Statistical Association

Harvard Data Science Initiative Postdoctoral Fellowship Application Review Committee

Harvard Chan-NIEHS Center for Environmental Health Pilot Project Application Review Committee

Women in Data Science Cambridge, Advisory Committee

Session Organizer, "Continuous/Multivariate Exposures or Mediators in Causal Inference", Atlantic Causal Inference Conference 2019

Session Co-organizer, "Causal Inference and Harmful Exposures", ENAR 2020

Journal Peer Reviewer
Annals of Applied Statistics, Biostatistics, Journal of the Royal Statistical Society Series A (Statistics in Society), Journal of Causal Inference, Statistics in Medicine, Environment International, Environmental Science & Technology, JAMA Network Open, Environmental Health Perspectives, Circulation: Cardiovascular Quality and Outcomes, Patterns, Communications Medicine, BMJ Open, American Journal of Respiratory and Critical Care Medicine, Nature Communications, Science, Science Advances, The Lancet Planetary Health

TECHNICAL SKILLS

Statistical Software	R, SAS, MATLAB
Other Software	Linux computing systems, Github, Markdown, Latex, Microsoft Office