

MARY D. WILLIS, Ph.D., M.P.H.

CONTACT INFORMATION

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EDUCATION

Ph.D., Public Health - Environmental and Occupational Health Minor: Biological Data Science College of Public Health and Human Sciences, Oregon State University, Corvallis, OR <u>Dissertation</u> : Quasi-Experimental Methods to Assess Impacts of Energy Policy on Pregnancy Outcomes <u>Advisor</u> : Perry Hystad	2016-2020
M.P.H., Public Health - Epidemiology School of Medicine and Dentistry, University of Rochester, Rochester, NY <u>Thesis</u> : Unconventional Natural Gas Development and Pediatric Asthma Hospitalizations <u>Advisor</u> : Elaine Hill	2014-2016
B.A., Epidemiology, Environmental Studies Minor: Film and Media Studies College of Arts and Sciences, University of Rochester, Rochester, NY	2011-2015

CURRENT ACADEMIC APPOINTMENTS

Assistant Professor Department of Epidemiology, School of Public Health, Boston University, Boston, MA	2022-present
Advisory Board Initiative on Cities, Boston University, Boston, MA	2024-present
Core Faculty Institute for Global Sustainability, Boston University, Boston, MA	2022-present
Partnering Faculty Center for Climate and Health, School of Public Health, Boston University, Boston, MA	2022-present
Courtesy Assistant Professor College of Public Health and Human Sciences, Oregon State University, Corvallis, OR	2022-present

PREVIOUS ACADEMIC APPOINTMENTS

Adjunct Instructor Department of Community Health Sciences, School of Medicine, Tufts University, Boston, MA	2022
Visiting Researcher Department of Epidemiology, School of Public Health, Boston University, Boston, MA	2020-2022
Postdoctoral Scholar College of Public Health & Human Sciences, Oregon State University, Corvallis, OR	2020-2022
Graduate Research Fellow (NIEHS F31) College of Public Health & Human Sciences, Oregon State University, Corvallis, OR	2019-2020
Predoctoral Trainee (NCATS TL1) School of Medicine, Oregon Health and Science University, Portland, OR	2018-2019
Graduate Research Assistant College of Public Health & Human Sciences, Oregon State University, Corvallis, OR	2016-2018
Graduate Research Assistant School of Medicine and Dentistry, University of Rochester, Rochester, NY	2014-2018
Technical Assistant, NCI Community Clinical Oncology Research Program School of Medicine and Dentistry, University of Rochester, Rochester, NY	2013-2016

AWARDS & HONORS

NIH Director's Early Independence Award, NIH Office of the Director	2022
Recognition of Committee Service, International Society for Environmental Epidemiology	2022
Conference Travel Award, International Society for Environmental Epidemiology	2020
Fred & Helen E. Durbin Scholarship, Oregon State University	2020
Best Oral Paper, Cascadia Annual Symposium on Environmental, Occupational, and Public Health	2020
Doctoral Student Travel Award, Oregon State University (Canceled due to COVID-19)	2020
Ruth L. Kirschstein Predoctoral National Research Service Award, NIH NIEHS	2019-2020
Training Grant/External Fellowship Tuition Relief Scholarship, Oregon State University	2019-2020
Warren & Frederica Schad Fellowship, Oregon State University	2019-2020
Best Oral Presentation, CARTEEH Symposium on Transportation, Air Quality, and Health	2019
Invited Participant, Computable Exposures Workshop, Oregon State University	2019
Mentored Predoctoral Career Development Award, NIH NCATS	2018-2019
Liam Wood Memorial Fellowship, Oregon State University	2018-2019
Warren & Frederica Schad Fellowship, Oregon State University	2018-2019
Dean's Graduate Scholarship, Oregon State University	2018-2019
Conference Travel Award, International Society for Environmental Epidemiology	2018
Workshop Scholarship for Deep Learning in Life Sciences, IBM & Oregon State University	2018
Best Oral Paper, Annual Semiahmoo Symposium on Environmental, Occupational and Public Health	2017
Liberty League All-Academic Team, Women's Rowing, University of Rochester	2015
Dean's Scholarship, University of Rochester	2011-2015

RESEARCH SUPPORT

Active Funding

1. **Title:** A Preconception Cohort Study on Oil and Gas Development, Fertility, and Pregnancy Sep 2022-Aug 2027
Project Number: DP5-OD033415, PI: Willis
Funder: NIH Office of the Director
Total Award: \$2,062,500
Role: Principal Investigator
2. **Title:** An Assessment of Environmental and Neighborhood-level Risk Factors for Subfertility Apr 2023-Mar 2028
among Black Women in the U.S.
Project Number: R01-ES035053, PI: Wesselink
Funder: NIH National Institute of Environment Health Sciences
Total Award: \$2,358,548
Role: Co-Investigator
3. **Title:** A Preconception Cohort Study of Air Pollution, Fertility, and Miscarriage Jul 2025-Jun 2030
Project Number: R01-ES029823, MPI: Wesselink, Wise
Funder: NIH National Institute for Environmental Health Sciences
Total Award: \$4,049,758
Role: Co-investigator

Pending Applications

1. **Title:** Economic Prosperity in the Resource Dependent Communities of Rural America Jun 2026-May 2029
Project Number: TBD, MPI: Thombs, Willis
Funder: National Institute of Food and Agriculture
Total Award: \$600,000
Role: Principal Investigator
2. **Title:** POWER-MED: Power Outages, Severe Weather Events, and Risk of Mortality among Jul 2026-Jun 2031
Electricity-Dependent Durable Medical Equipment Users in Medicare
Project Number: R01-AG102701, MPI: Willis, Casey
Funder: NIH National Institute on Aging
Total Award: \$3,957,254
Role: Principal Investigator
3. **Title:** Resource Extraction and Community Adaptation for Population Health (RE-CAP Health): Jul 2026-Jun 2031
A National Study of Oil and Gas Development and Psychiatric Hospitalizations in Medicaid
Claims
Project Number: R01-MH145333, MPI: Willis, Nori-Sarma
Funder: NIH National Institute of Mental Health
Total Award: \$4,053,688
Role: Principal Investigator

4. Title: Maternal-Infant Health in Resource-Dependent Communities: A Quasi-Experimental Study of U.S. Economic Cycles Apr 2026-Mar 2031
Project Number: R01-HD121574, PI: Willis
Funder: NIH National Institute of Child Health and Human Development
Total Award: \$4,015,316
Role: Principal Investigator
5. Title: Driving Prosperity: The Resurgence of the American Automotive Industry and Community Patterns of Working-Age Mortality Apr 2026-Mar 2028
Project Number: R21-HD121776, PI: Willis
Funder: NIH National Institute of Child Health and Human Development
Total Award: \$449,356
Role: Principal Investigator
6. Title: Impact of Environmental Exposure to Repeated Outages (INVERT) Apr 2026-Mar 2028
Project Number: R21-ES037764, PI: Milando
Funder: NIH National Institute for Environmental Health Sciences
Total Award: \$460,565
Role: Co-investigator
7. Title: Protecting Public Health and Community Resilience as Data Centres Scale Jul 2026-Jun 2031
Funder: Wellcome Trust, PI: Wu
Total Award: \$4,600,000
Role: Co-investigator

Completed Support

1. Title: Environmental and Reproductive Consequences of Residential Segregation in the Preconception Period Sep 2024-Apr 2025
Project Number: DP5-OD033415-S1
Funder: NIH Office of the Director
Total Award: \$94,067
Role: Principal Investigator (Mentee: Sharonda Lovett)
2. Title: Building a Framework for Analyzing the Impact of Highway Reclamation Projects on Local Communities Oct 2023-Mar 2025
Project Number: N/A, PI: Mary Willis
Funder: Boston University School of Public Health, Early Career Catalyst Award
Total Award: \$19,798
3. Title: Trace Gases from Anthropogenic Methane Sources and Health (TRASH) Study April 2024-Mar 2025
Project Number: N/A, PI: Buonocore
Funder: Boston University School of Public Health, Early Career Catalyst Award
Total Award: \$19,798
Role: Co-investigator
4. Title: Medicaid Claims Data for Climate and Health Apr 2023-Oct 2024
Project Number: N/A, MPI: Nori-Sarma, Gradus
Funder: Boston University School of Public Health, Spark Award
Total Award: \$100,000
Role: Co-investigator
5. Title: Impacts of Vehicle Emission Regulations and Local Congestion Policies on Birth Outcomes Associated with Traffic Air Pollution Apr 2020-Jun 2024
Project Number: HEI 4970, RFA 18-1, PI: Perry Hystad
Funder: Health Effects Institute
Total Award: \$1,163,031
Role: Co-Investigator
6. Title: The Energy & Equity Exposures Database: A Tool for Understanding the Health and Societal Implications of a Just Energy Transition Jul 2023-Jun 2024
Project Number: N/A, MPI: Jonathan Buonocore, Mary Willis
Funder: Boston University Institute for Global Sustainability, Sustainability Research Program
Total Award: \$150,000
Role: Principal Investigator (MPI: Jonathan Buonocore)
7. Title: Mortality Trends and Disparities by Residential Proximity to Shale Gas Development in Central Appalachia May 2022-Jun 2023
Project Number: N/A, PI: Corrine Ruktanonchai
Funder: Interdisciplinary Network on Rural Population Health and Aging (INRPHA) Pilot Program, NIH National Institute on Aging
Total Award: \$20,000
Role: Co-investigator

8. Title: Environmental Data Integration to Assess Impacts of Shale Gas Development on Perinatal Health Outcomes and Childhood Cancers Sep 2019-Sep 2020
Project Number: F31 ES029801, PI: Mary Willis
Funder: NIH National Institute of Environmental Health Sciences
Total Fellowship: \$54,858
Role: Principal Investigator
9. Title: Oregon Clinical and Translational Research Institute TL1 Program Sep 2018-Aug 2019
Project Number: TL1 TR002371, MPI: Cynthia Morris, Allison Fryer
Funder: NIH National Center for Advancing Translational Sciences
Total Fellowship: \$28,324
Role: Predoctoral Trainee

Declined Awards

1. Title: Influence of Oil and Gas Development on Couples' Reproductive Health: A Preconception Cohort Study Jul 2022-Jun 2027
Project Number: K99-ES033727, PI: Mary Willis
Funder: NIH National Institute of Environmental Health Sciences
Total Award: \$937,480 (K99-R00)

RESEARCH PUBLICATIONS

- ♦ Led by student mentee or postdoctoral trainee
- Authors contributed equally to this work

Peer Reviewed Articles

1. ♦ Lovett S, Campbell E, Richardson A, Wesselink A, Ncube C, Cozier Y, Wise L, **Willis M**. Racialized economic segregation in relation to fecundability in a preconception cohort study. *J Urban Health*. 2025 Dec 20. DOI: 10.1007/s11524-025-01038-y. Epub ahead of print. PMID: 41422358. Winner of the Society for Pediatric and Perinatal Epidemiologic Research (SPER) Student Prize Paper Award (2025).
2. ♦ Black-Ingersoll F, **Willis M**, White J, Grady S, Vrkljan K, Duncan A, Burrows K, Oblath R, Nori-Sarma A. Climate resilience adaptation and psychiatric emergency services utilization during extreme heat in Boston, MA: a difference-in-differences analysis. *Environ Int*. 2025 Dec 16;207:110007. DOI: 10.1016/j.envint.2025.110007. Epub ahead of print. PMID: 41418637.
3. **Willis M**, Sheng C, Lovett S, Feldscher T, Sims K, Francis B, Hicks J, Holder E, Wise L, Cozier Y, Wesselink A. Historical neighborhood redlining and fertility in a cohort of U.S. Black women. *Epidemiol*. 2025 Dec 5. DOI: 10.1097/EDE.0000000000001942. Epub ahead of print.
4. ♦ Lovett S, Wise L, Richardson A, Campbell E, Vrkljan K, Kirwa K, Wesselink A, Rothman K, **Willis M**. A preconception cohort study of historical mortgage lending discrimination and present-day fecundability. *Am. J. Epidemiol*. 2025 Dec 4;kwaf237. DOI: 10.1093/aje/kwaf237. Epub ahead of print. PMID: 41342351. Winner of the American College of Epidemiology (ACE) Student Paper Prize Award (2025).
5. Thombs R, **Willis M**. Impact of Boom-and-Bust Economies from Oil and Gas Development on Working Age Mortality in the U.S. *Environ. Epidemiol*. 2025 Dec 9(6):p e438. DOI: 10.1097/EE9.0000000000000438.
6. Buonocore J, Mooney F, van Loenen B, Sousa B, Campbell E, Nori-Sarma A, Fabian P, **Willis M**. High Populations Near Fossil Fuel Energy Infrastructure Across the Supply Chain and Implications for an Equitable Energy Transition. *Environ Res Lett*. 2025 Nov 1;20(11):114093. DOI: 10.1088/1748-9326/ae0da6.
7. Wesselink A, **Willis M**, Lovett S, Sheng C, Kuohung W, Hicks J, Peters J, Sheehy S, Palmer J, Wise A, Cozier Y. Neighborhood socioeconomic status and fecundability in the Black Women's Health Study. *Environ Epidemiol*. 2025 Oct 23;9(6):e428. DOI: 10.1097/EE9.0000000000000428.
8. **Willis M**, Cesare N, Harleman M, Black-Ingersoll F, Gradus J, Thombs R, Oblath R, Buonocore J, Welch B, Casey J, Braun D, Dominici F, Nori-Sarma A. Impact of Boom-and-Bust Economies from Oil and Gas Development on Psychiatric Hospitalizations among Medicaid Beneficiaries. *Envi. Res. Health* 2025 Sep;3(3). DOI: 10.1088/2752-5309/ae01ce.
9. ♦ Vrkljan K, Oblath R, Black-Ingersoll F, Grady S, Parker S, Burrows K, Nori-Sarma A, **Willis M**. A Case-Crossover Study of Extreme Heat and Psychiatric Emergency Department Visits among Pregnant People. *Paediatr. Perinat. Epidemiol*. 2025 Aug;39(6):571-581. DOI: 10.1111/ppe.70044.
10. ♦ Campbell E, Koenig M, Mooney F, Clark C, Gonzalez D, Deziel N, Casey J, Buonocore J, **Willis M**. A Narrative Review of Spatial-Temporal Data Sources for Estimating Population-Level Exposures to Oil and Gas Development in the United States. *Curr. Environ. Envi. Health Rep*. 2025 Apr 22;12(1):21. DOI: 10.1007/s40572-025-00485-8.
11. Hystad P, **Willis M**, Hill E, Schrank D, Molitor J, Larkin A, Ritz B. Impacts of Vehicle Emission Regulations and Local Congestion Policies on Birth Outcomes Associated with Traffic Air Pollution. *Res. Rep. Health Eff. Inst*. 2025 Feb; 2025 (223):1-88.

12. Wolf S, Bullard R, Buonocore J, Donley N, Farrelly T, Fleming J, González D, Oreskes N, Ripple W, Saha R, **Willis M**. Scientists' Warning on Fossil Fuels. *Oxford Open Climate Change*. 2025; 5(1). DOI: 10.1093/oxfclm/kgaf011.
13. ♦ Soni M, Arunachalam S, Ramarao, Efstathiou C, Rick C, Buckley L, Dinesh C, **Willis M**, Perera F, Kinney P, Levy J, Buonocore J. A High Resolution Multipollutant Assessment of Health Damages Due to the Onroad Sector in Boston, Massachusetts. *Sci. Total Environ*. 2025 Feb 24; 969:178847. DOI: 10.1016/j.scitotenv.2025.178847.
14. Wesselink A, Johannesen B, Wang T, Ketzel M, Mikkelsen E, Brandt J, Khan J, Hertel O, Laursen AS, **Willis M**, Levy J, Rothman K, Sørensen H, Wise L, Hatch E. Residential exposure of PM_{2.5} constituents and fecundability in a Danish preconception cohort. *Paediatr. Perinat. Epidemiol*. 2025. Mar;39(3):256-261. DOI: 10.1111/ppe.13174.
15. Hystad P, Hill E, Harris L, Harleman M, Campbell E, Molitor J, Ritz B, **Willis M**. Changes in traffic-related air pollution exposures and associations with adverse birth outcomes over 20 years in Texas. *Int. J. Epidemiol*. 2025 Feb; 54(1):dyae178. DOI: 10.1093/ije/dyae178.
16. Buonocore J, Fisher J, Prull D, **Willis M**, Arunachalam S, Perera F, Kinney P, Sousa B, Levy J. Federal Policy Platforms and Public Health: Reinforcing the Benefits of Air Pollution Control Devices on Power Plants in the United States. *Am. J. Public Health*. 2025 Jan;115(1):30-33. DOI: 10.2105/AJPH.2024.307896.
17. **Willis M**, Mooney F, Hystad P, Weuve J, Stelly A, Walker A, Walker H, Fox S, Lees L. The Promises and Potential Pitfalls of Highway Reclamation for Population Health: A Research Framework. *J. Urban Health* 2024 Dec; 101(6):1270-1273. DOI: 10.1007/s11524-024-00933-0.
18. Larkin A, **Willis M**, Harris L, Ritz B, Hill E, Hystad P. Living Downwind of High Traffic Roads and Adverse Birth Outcomes: An Instrumental Variable Analysis. *Am. J. Epidemiol*. 2024 Dec 193(12): 1720-1728. DOI: 10.1093/aje/kwae120.
19. **Willis M**, Casey J, Buonocore J. Potential Health Hazards of Cryptocurrency Mining: Protecting Health in a "Digital Oil Boom." *JAMA*. 2024;332(16):1329-1330. DOI: 10.1001/jama.2024.15917.
20. ♦ Buckley L, Arter C, **Willis M**, Geddes J, Rick C, Kinney P, Arunachalam S, Buonocore J, Levy J. A Comparison of Population-Level Exposure and Equity Tradeoffs Across Strategies to Reduce Fine Particulate Matter Emissions from Transportation Sources in the Northeastern U.S. *Environ. Res*. 2024 262:1, 119791. DOI: 10.1016/j.envres.2024.119791.
21. ♦ Harris L, Harleman M, **Willis M**, Ritz B, Hystad P, Hill E. Limited Impact of Roadway Construction on Nearby Home Prices. *Transport Policy*. 157:1-9. DOI: 10.1016/j.tranpol.2024.07.019.
22. Wesselink A, Gause E, Spangler K, Hystad P, Kirwa K, **Willis M**, Wellenius G, Wise L. Ambient heat and spontaneous abortion: A case-crossover study. *Epidemiol*. 2024 Nov 1;35(6):864-873. DOI: 10.1097/EDE.0000000000001774.
23. **Willis M**, Campbell E, Selbe S, Koenig M, Gradus J, Nillni Y, Deziel N, Casey J, Hatch E, Wesselink A, Wise L. Residential Proximity to Oil and Gas Development and Markers of Psychosocial Stress and Depression in a North American Preconception Cohort Study, 2013-2023. *Am. J. Public Health*. 2024 Sep;114(9):923-934. DOI: 10.2105/AJPH.2024.307730.
24. Reimer C, **Willis M**, Wesselink A, Hystad P, Hatch E, Kirwa K, Gradus J, Wise L, Jimenez MP. Residential Proximity to Green Space and Markers of Psychosocial Stress and Depression in a Preconception Cohort. *Environ. Res*. 2024 Jun 18; 119438. DOI: 10.1016/j.envres.2024.119438.
25. González D, Morello-Frosch R, Liu L, **Willis M**, Feng Y, McKenzie L, Steiger B, Wang J, Deziel N, Casey J. Wildfires increasingly threaten oil and gas wells in the western United States with disproportionate impacts on marginalized populations. *One Earth*. 2024 June 7 (6): 1044-1055. DOI: 10.1016/j.oneear.2024.05.013.
26. **Willis M**, Hoffman M, Wang T, Sabbath E, Kuriyama A, Wesselink A, Wise L. Evaluating participant engagement in a preconception cohort study in relation to the Dobbs decision. *Paediatr. Perinat. Epidemiol*. 2024 Apr 26. DOI: 10.1111/ppe.13080.
27. Hill E, Harleman M, Sventek G, Harris L, Ritz B, Campbell E, **Willis M**, Hystad P. Roadway construction as a natural experiment to examine air pollution impacts on infant health. *Environ. Res*. 2024 Mar 28:118788. DOI: 10.1016/j.envres.2024.118788.
28. Savitz D, Wise L, Hatch E, Yland J, Wesselink A, **Willis M**, Ncube C, Rothman K. Responding to Reviewers and Editors Regarding Statistical Significance Testing. *Ann. Intern. Med*. 2024 Mar;177(3):385-386. DOI: 10.7326/M23-2430.
29. Wesselink A, Kirwa K, Hystad P, Kaufman J, Szpiro A, **Willis M**, Savitz D, Levy J, Rothman K, Mikkelsen E, Laursen A, Hatch E, Wise L. Ambient air pollution and rate of spontaneous abortion. *Environ. Res*. 2024 Apr 246: 118067. DOI: 10.1016/j.envres.2023.118067.
30. Sabbath E, **Willis M**, Wesselink A, McKinnon C, Wang T, Hatch E, Wise L. Association between job control and time to pregnancy in a preconception cohort. *Fert. Stert*. 2024 Mar;121(3):497-505 DOI: 10.1016/j.fertnstert.2023.11.022.
31. Bond J, Coleman C, Yland J, Wesselink A, Wang T, **Willis M**, Hatch E, Rothman K, Savitz D, Wise L. Preconception sleep duration, non-daytime work schedules, and incidence of spontaneous abortion: a prospective cohort study. *Hum. Reprod*. 2024 Feb 1;39(2):413-424. DOI: 10.1093/humrep/dead249.

32. **Willis M**, Harris L, Campbell E, Chaskes M, Sawyer S, Harleman M, Ritz B, Hill E, Hystad P. A Population-based Cohort Study of Electronic Tolling, Traffic Congestion, and Adverse Birth Outcomes. *Environ. Int.* 2024 Jan; 183:108355. DOI: 10.1016/j.envint.2023.108355.
33. Wise L, Wang T, Wesselink A, Wegienka G, Geller R, Coleman C, **Willis M**, Marsh E, Calafat A, Messerlian-Lambert G, Mikkelsen E, Hatch E. Perfluoroalkyl and Polyfluoroalkyl Substances and Anti-Müllerian Hormone Concentrations in Two Preconception Cohort Studies. *Environ. Health Perspect.* 2023;131(10):107703. DOI: 10.1289/EHP12592.
34. Wesselink A, Hystad P, Kirwa K, Kaufman J, **Willis M**, Wang T, Szpiro A, Levy J, Savitz D, Rothman K, Hatch E, Wise L. Air pollution and fecundability in a North American preconception cohort study. *Environ. Int.* 2023 Nov; 181:108249. DOI: 10.1016/j.envint.2023.108249.
35. Sims K, **Willis M**, Hystad P, Batty G, Bibbins-Domingo K, Smit E, Odden M. Neighborhood characteristics and elevated blood pressure in US older adults. *JAMA Net. Open.* 2023;6(9):e2335534. DOI: 10.1001/jamanetworkopen.2023.35534.
36. **Willis M**, Hill E, Ncube C, Campbell E, Harris L, Harleman M, Ritz B, Hystad P. Changes in Socioeconomic Disparities for Traffic-Related Air Pollution Exposure During Pregnancy Over a 20-Year Period in Texas. *JAMA Net. Open.* 2023;6(8):e2328012. DOI:10.1001/jamanetworkopen.2023.28012
37. Harleman M, Harris L, **Willis M**, Ritz B, Hystad P, Hill E. Changes in Traffic Congestion and Air Pollution Due to Major Roadway Infrastructure Improvements in Texas. *Sci. Total Environ.* 2023 Jul 17; 898:165463. DOI: 10.1016/j.scitotenv.2023.
38. Wesselink A, Lovett S, Weinberg J, Geller R, Wang T, Regan A, **Willis M**, Perkins R, Yland J, Koenig M, Rothman K, Hatch E, Wise L. COVID-19 vaccination and menstrual cycle characteristics: A prospective cohort study. *Vaccine* 2023; Jun 29; 41(29): 4327-4334. DOI: 10.1016/j.vaccine.2023.06.012.
39. **Willis M**, Wesselink A, Kirwa K, Hystad P, Hatch E, Wise L. Associations between Residential Greenness and Fecundability in a North American Preconception Cohort Study. *Environ. Health Perspect.* 2023; 131(4):47012. DOI: 10.1289/EHP10648.
40. **Willis M**, Cushing L, Buonocore J, Deziel N, Casey J. It's Electric! An Environmental Equity Perspective on our Energy Sources. *Environ. Epidemiol.* 2023; 7(2):e246. DOI: 10.1097/EE9.0000000000000246.
41. ♦ Campbell E, Hill E, Sims K, **Willis M**. Associations among Historical Neighborhood Disinvestment, Hazardous Air Pollution, and Current Adult Asthma Prevalence. *Environ. Health Perspect.* 2023; 131(3). DOI: 10.1289/EHP11371.
42. Harper T, Kuohung W, Sayres L, **Willis M**, Wise L. Optimizing Preconception Care and Interventions for Improved Population Health. *Fertil. Steril.* 2023; Sep;120(3 Pt 1): 438-448. DOI: 10.1016/j.fertnstert.2022.12.014
43. **Willis M**, Carozza S, Hystad P. Congenital Anomalies Associated with Oil and Gas Wells, Resource Extraction, and Produced Water: A Population-Based Retrospective Cohort Study in Texas. *J. Expo. Sci. Environ. Epidemiol.* 2023; 33, 84-93. DOI: 10.1038/s41370-022-00505-x.
44. **Willis M**, Schrank D, Xu C, Harris L, Ritz B, Hill E, Hystad P. A Population-based Cohort Study of Traffic Congestion and Infant Growth using Connected Vehicle Data. *Sci. Adv.* 2022; 8(43). DOI: 10.1126/sciadv.abp8281
45. Geller R, Wesselink A, Upson K, Claus Henn B, Schildroth S, Wright R, Coleman C, **Willis M**, Bethea T, Williams P, Harmon Q, Baird D, Wegienka G, Wise L. Correlates of Blood Metal Levels among Reproductive-Aged Black Women. *J. Expo. Sci. Environ. Epidemiol.* 2022; Sep(14). DOI: 10.1038/s41370-022-00477-y
46. McKinnon C, Joglekar D, Hatch E, Rothman K, Wesselink A, **Willis M**, Wang T, Mikkelsen E, Eisenberg M, Wise L. Male Personal Heat Exposures and Fecundability: A Preconception Cohort Study. *Andrology* 2022; 10(8): 1511-1521. DOI: 10.1111/andr.13242.
47. **Willis M**, Orta O, Ncube C, Wesselink A, Đoàn L, Kirwa K, Boynton-Jarrett R, Hatch E, Wise L. Association Between Neighborhood Disadvantage and Fertility Among Pregnancy Planners in the US. *JAMA Net. Open.* 2022; 5(6):e2218738. DOI: 10.1001/jamanetworkopen.2022.18738
48. Wesselink A, Hatch E, Rothman K, Wang T, **Willis M**, Willis S, Yland J, Crowe H, Perkins R, Levinson J, Regan A, Wise L. Associations among COVID-19 Vaccination, COVID-19 Infection, and Fecundability in a Preconception Cohort Study. *Am. J. Epidemiol.* 2022; 191(8): 1383-1395. DOI: 10.1093/aje/kwac011.
49. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Associations between Residential Proximity to Oil and Gas Extraction and Hypertensive Conditions during Pregnancy: A Difference-in-Differences Analysis in Texas, 1996-2009. *Int. J. Epidemiol.* 2022 Apr;51(2):525-536. DOI: 10.1093/ije/dyab246.
50. Wesselink AK, Wang TR, Ketzel M, Mikkelsen EM, Brandt J, Khan J, Hertel O, Laursen ASD, Johannesen BR, **Willis M**, Levy JI, Rothman KJ, Sørensen HT, Wise LA, Hatch EE. Air Pollution and Fecundability: Results from a Danish Preconception Cohort Study. *Paediatr. Perinat. Epidemiol.* 2022 Jan;36(1):57-67. DOI: 10.1111/ppe.12832
51. **Willis M**, Hill E, Boslett A, Kile M, Carozza S, Hystad P. Associations between Residential Proximity to Oil and Gas Drilling and Term Birth Weight and Small for Gestational Age Infants in Texas: A Difference-in-Differences Analysis. *Environ. Health Perspect.* 2021;129(7). DOI: 10.1289/EHP7678.

52. Denham A, **Willis M**, Croft D, Liu L, Hill E. Unconventional Natural Gas Development Associated with Acute Myocardial Infarction Hospitalizations and Mortality. *Environ. Res.* 2021; 195. DOI: 10.1016/j.envres.2021.110872.
53. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Assessing the Effectiveness of Vehicle Emission Regulations on Improving Perinatal Health: A Population-Based Accountability Study. *Int. J. Epidemiol.* 2021 Jan; 49(6): 1781-1791. DOI: 10.1093/ije/dyaa137.
54. **Willis M**, Hystad P, Denham A, Hill E. Natural Gas Development, Flaring Practices, and Pediatric Asthma Hospitalizations from 2000 to 2010 in Texas, USA. *Int. J. Epidemiol.* 2021 Jan; 49(6): 1883-1897. DOI: 10.1093/ije/dyaa115.
55. Thessen AE, Grondin CJ, Kulkarni RD, Brander S, Truong L, Vasilevsky NA, Callahan TJ, Chan LE, Westra B, **Willis M**, Rothenberg SE, Jarabek AM, Burgoon L, Korrick SA, Haendel MA. Community Approaches for Integrating Environmental Exposures into Human Models of Disease. *Environ. Health Perspect.* 2020 Dec; 128(12):e125002. DOI: 10.1289/EHP7215.
56. Denham A, **Willis M**, Zavez A, Hill E. Unconventional Natural Gas Development and Hospitalizations: Evidence from Pennsylvania, United States, 2003–2014. *Public Health.* 2019 Mar; 1(168):17–25. DOI: 10.1016/j.puhe.2018.11.020
57. **Willis M**, Hystad P. Hazardous Air Pollutants and Adverse Birth Outcomes in Portland, Oregon. *Environ Epidemiol.* 2019 Feb; 3(1):e034. DOI: 10.1097/EE9.0000000000000034.
58. **Willis M**, Jusko T, Halterman J, Hill E. Unconventional Natural Gas Development and Pediatric Asthma Hospitalizations in Pennsylvania. *Environ. Res.* 2018; 166: 402-408. DOI: 10.1016/j.envres.2018.06.022.

Invited Commentaries

1. Sims K, Glymour M, Ncube C, **Willis M**. Improving spatial exposure data for everyone – lifecourse social context and ascertaining residential history. *Am. J. Epidemiol.* 2025 Mar; 194(3). DOI: 10.1093/aje/kwae244.
2. Casey J, **Willis M**. Drilling down into the mechanisms linking oil and gas development to adverse perinatal health outcomes. *Environ. Health Perspect.* 2024 Oct;132(10). DOI: 10.1289/EHP15106.
3. **Willis M**, Buonocore J. Fossil Fuel Racism: The Ongoing Burden of Oil and Gas Development in the Shadow of Regulatory Inaction. *Am. J. Public Health.* 2023 Aug 31;e1-e3. DOI: 10.2105/AJPH.2023.307403.

Manuscripts Submitted & Under Review

1. **Willis M**, ▪ Koenig M, ▪ Vrkljan K, Mooney F, Campbell E, Deziel N, Wesselink A, Parker S, Wise L. Hypertensive Disorders of Pregnancy Associated with Residential Proximity to Oil and Gas Development in a North American Preconception Cohort Study. Under review at *Am. J. Epidemiol.*
2. **Willis M**, Van Loenen B, McBrien H, Rubenstein E, Casey J. Trends in Medicare Beneficiaries' Use of Electricity-Dependent Durable Medical Equipment, 2016-2025. Under review at *Epidemiol.*
3. **Willis M**, Buonocore J, Chen C, Grady S. Procedural Justice in the Siting of Data Centers: The Real-World Impacts of a Virtual Industry. Under review at *Am. J. Public Health.*
4. ♦ Koenig M, Vrkljan K, Mooney F, Campbell E, Deziel N, Wesselink A, Wise L, **Willis M**. Residential Proximity to Oil and Gas Development and Risk of Gestational Diabetes Mellitus: A North American Preconception Cohort Study. Revision requested at *Int. J. Epidemiol.*
5. ♦ Schwarz L, Flores N, González D, Southerland V, Brooks N, Aker A, Buonocore J, Casey J, **Willis M**. Residential proximity to oil and gas development and socio-economic conditions: A comparative analysis of 33 countries. Under review at *PNAS*.
6. ♦ Lovett S, Richardson A, Campbell E, Wesselink A, Wise L, **Willis M**. County-level socioeconomic trajectories and fecundability: A preconception cohort study. Under review at *J. Urban Health.*
7. ▪ Nordgaard C, ▪ Krasner A, Maybank A, Black-Ingersoll F, Buonocore J, **Willis M**. Recent gas stove use and asthma exacerbations in adults enrolled in NHANES 2013-2018. Under review *Environ. Res. Health.*
8. Thombs R, Sovacool B, Jorgenson A, Buonocore J, **Willis M**. A Not-So-Just Transition? Declining Coal Mining Employment Lowers Life Expectancy in U.S. Counties. Revision requested at *Rural Sociol.*
9. Buonocore J, **Willis M**. A Healthy Energy System is a Human Right. Under review at *The Lancet.*
10. ♦ Clark C, Grady S, Campbell E, Buonocore J, Aker A, Deziel N, Casey J, **Willis M**. A national analysis of public school proximity to oil and gas development in the United States. Revision requested at *J. Exp. Sci. Environ. Epidemiol.*
11. ♦ ▪ Clark C, ▪ Bond J, Rowse M, Vrkljan K, Polka E, Campbell E, Wesselink A, Aker A, **Willis M**. Oil and Gas Development and Adverse Pregnancy Outcomes: A Qualitative and Quantitative Bias Analysis of the Epidemiologic Literature. Revision requested at *Curr. Environ. Rep.*
12. Nori-Sarma A, Cartwright B, Zanolletti A, Pastwa A, Stucky N, **Willis M**. Emergency Department Use During an Extreme Heat Event: A Near-Real-Time Analysis. Under review at *Nat. Medicine.*
13. ♦ Geller R, **Willis M**, Ncube C, Baird D, Wise L, Wesselink A. Neighborhood Disadvantage and Menstrual Function in a North American Preconception Cohort Study. Under review at *Fert. Steril.*
14. ♦ ▪ Black-Ingersoll F, ▪ Burrows K, Grady S, Teigen K, Vrkljan K, Fabian MP, Henderson DC, Duncan A, **Willis M**, Oblath R, Nori-Sarma A. Ambient temperature impacts on psychiatric emergency department visits: the PRIME-Boston study. Under review at *Lancet Planet. Health.*

15. Milando C, Khemani M, James A, Correi-Silva J, Collins J, Scammell M, **Willis M**, Levy J, Nori-Sarma A. Estimating Spatial and Temporal Patterns of Residential Power Outages in Massachusetts from 2013 to 2022 Using Public Records. Under review at *J. Urban Health*.
16. Kashtan Y, Pendleton J, Sousa B, Domen J, **Willis M**, Michanowicz D, Shonkoff S, Buonocore J. Direct Air Capture has Substantial Health and Climate Opportunity Costs. Under review at *Comm. Sustainability*.
17. Burrows K, Black-Ingersoll F, Sprague N, Grady S, Vrkljan K, Just A, **Willis M**, Oblath R, Nori-Sarma A. Hourly ambient temperature and psychiatric emergency department visits. Under review at *Nat. Mental Health*.
18. ♦ Buckley L, Soni M, Rick C, **Willis M**, Geddes J, Arunachalam S, Buonocore J, Levy J. Targeted Emission Reductions in the Boston Metropolitan Region: Assessing Health and Equity Impacts across Vehicle Classes and Source Regions. Under review at *Environ. Res. Health*.
19. ♦ Buckley L, Buonocore J, Khemani M, Southerland V, **Willis M**, Geddes J, Levy J. Assessing the Magnitude and Direction of Health Impacts of Nitrogen Dioxide Exposure in Mexico: A Comparative Analysis of Global Exposure Datasets. Under review at *Environ. Res. Health*.
20. ♦ Zhou J, Lin E, Wesselink A, Schildroth S, **Willis M**, Hatch E, ▪ Wise L, ▪ Pollitt K. Contribution of consumer products to emerging chemical exposures in a preconception cohort study. Under review at *Environ. Int*

OTHER PUBLISHED WORK

Amicus Brief

1. Environmental Law Clinic, Deborah A. Sivas and Rica Garcia for González D, Morello-Frosch R, Johnston J, **Willis M**, Buonocore J, Casey J, McKenzie L. as Amici Curiae on behalf of Appellants. V Lions Farming, LLC, et al. vs. County of Kern, et al. Court of Appeals of the State of California Fifth Appellate District. Filed March 7, 2024.
2. Mark Fine and Steph Tai for Alliance of Nurses for Healthy Environments, American Lung Association, Athas WF, Buonocore J, Byron L, Casey JA, Cushing LJ, Frumkin H, Gonzalez DJX, Physicians for Social Responsibility, Science Environmental Health Network, Shamasunder B, Union of Concerns Scientists, **Willis M** as Amici Curiae on behalf of Appellants. Marc Atencio et al. vs. The New Mexico Legislature & The State of New Mexico & New Mexico Chamber of Commerce and Independent Petroleum Association of New Mexico. Court of Appeals in the State of New Mexico. Filed December 16, 2024.

Data Product

1. Mooney F, Black-Ingersoll F, **Willis M**. 2025, "Highway Reclamation Spatial Database," DOI: 10.7910/DVN/RGGMUN, Harvard Dataverse, V1.
2. Campbell E, Vrkljan K, Buonocore J, **Willis M**. 2025, "Supplement to the Oil and Gas Extraction Data in OGIM", DOI: 10.7910/DVN/0C1I9W, Harvard Dataverse, V1.
3. Buonocore J, van Loenen B, Sousa B, Mooney F, **Willis M**, 2025, "EI3 Infrastructure Counts by US Census Tract", DOI: 10.7910/DVN/KLUSQB, Harvard Dataverse, V1.

CONFERENCE & INVITED PRESENTATIONS

♦ Led by student mentee

* Awarded best oral presentation

Selected Invited Talks

1. **Willis M**. Confronting the Environmental and Public Health Impacts of Artificial Intelligence and Data Center Development. Keynote Presentation for Earth Week, College of Health, Science, and Technology, University of Illinois Springfield (UIS), Springfield, IL, April 15, 2026.
2. **Willis M**. TBD. Energy Policy Institute at Chicago, University of Chicago, Chicago, IL, March 24, 2026.
3. **Willis M**. An Epidemiologic Perspective on Oil and Gas Development. Population Research Institute, Pennsylvania State University, State College, PA, November 11, 2025.
4. **Willis M**. Policy-relevant Epidemiology for Energy & the Environment. Department of Epidemiology and Environmental Health, University at Buffalo, Buffalo, NY, March 27, 2025.
5. **Willis M**. Early Epidemiological Results into Oil and Gas Development from a Prospective Preconception Cohort Study. Shale & Public Health, Duquesne University, Pittsburgh, PA, February 25, 2025.
6. **Willis M**. Epidemiological Insights into Energy Sector Hazards. Seminar Series on Environmental and Occupational Health Sciences. University of Washington, Seattle, WA, February 6, 2025.
7. **Willis M**. An Accountability Study of Traffic Regulations and Infant Health. Symposium on Climate, Biogeoscience, and Health: Transformative Science to Real-World Action. Boston, MA, December 6, 2024.
8. **Willis M**. Oil & Gas Development and Population Health: An Environmental Hazard or Economic Threat? Research on Tap: Climate Change and Clean Energy. Boston University Office of Research. Boston, MA, December 5, 2024.

9. **Willis M.** Environmental and Economic Consequences of Oil and Gas Development for Population Health. Seminar Series on Environmental and Occupational Epidemiology. University of North Carolina, Chapel Hill. Chapel Hill, NC, November 8, 2024.
10. **Willis M.** Multidimensional Impacts of Oil and Gas Development on Mental Health. World Mental Health Day Lightning Talks. BUSPH Center for Trauma and Mental Health. Boston, MA, October 10, 2024.
11. **Willis M,** Buonocore J. Energy Infrastructure, Exposure Intensity, and Equity Indices: The [EI]³ Database. Monthly Meeting of the Interagency Crosscutting Group on Climate Change and Human Health: Climate Change, Food Systems, and Nutrition Security Workstream. U.S. Global Change Research Program. Virtual, June 12, 2024.
12. **Willis M,** Buonocore J. Energy Infrastructure, Exposure Intensity, and Equity Indices: The [EI]³ Database. Monthly Meeting of the Interagency Crosscutting Group on Climate Change and Human Health. U.S. Global Change Research Program. Virtual, May 17, 2024.
13. **Willis M.** Structural Determinants of Fertility: Results from a North American Preconception Cohort Study. National Institute of Environmental Health Epidemiology Branch Seminar Series, Research Triangle Park, NC, December 13, 2023.
14. **Willis M.** A Multidimensional Assessment of Oil and Gas Development and Community Health. NSF Energy and Environmental Justice Workshop, University of Tennessee, Knoxville, TN, October 26-27, 2023.
15. **Willis M.** Policy-relevant Epidemiologic Methods for Traffic-related Air Pollution & Infant Health. Catalyst Seminar Series, Center for the Investigation of Environmental Hazards Collaborative Center in Children's Environmental Health Research & Translation, Grossman School of Medicine, New York University, virtual, September 18, 2023.
16. **Willis M.** Building an Energy Epidemiology Agenda for Health-Protective Policy Decisions. Institute for Global Sustainability, Boston University. Boston, MA, March 1, 2023.
17. **Willis M.** Using Connected Vehicle and Device Data in a Population-based Cohort Study. Texas Transportation Institute, College Station, TX, April 6th, 2022.
18. **Willis M.** Reproductive Health and Shale Gas Development. Fracking and Health Seminar Series, Environmental Health Project, Pittsburgh, PA, April 27, 2022.
19. **Willis M.** The Energy Sector & Population Health: Applications of policy-relevant epidemiology for perinatal and reproductive health outcomes. Department of Environmental & Occupational Health, University of Illinois, Chicago. March 17, 2022.
20. **Willis M.** Environmental Hazards and Reproductive Health: Applications of Policy-Relevant Epidemiology. Population Health Research Institute Seminar Series, Cleveland, OH, December 7, 2021.

Selected Conference Presentations

1. **Willis M,** Sousa B, Mooney F, Grady S, Casey J, Buonocore J. The Sound of Bitcoin: Community Noise Concerns from Cryptocurrency Mining in the U.S. Invited symposium presentation. Annual Meeting of the International Society for Environmental Epidemiology, Atlanta, GA, August 10-13, 2025.
2. ♦ Lovett S, Wise L, Richardson A, Campbell E, Ncube C, Cozier Y, Wesselink A, **Willis M.** Associations between Racialized Economic Segregation and Fecundability in a Preconception Cohort Study. Annual Meeting of the Society for Epidemiologic Research. Boston, MA, June 10-13, 2025.
3. ♦ Black-Ingersoll F, **Willis M,** Grady S, Vrkljan K, Duncan A, Burrows K, Oblath R, Nori-Sarma A. Effectiveness of heat alert warning systems to reduce psychiatric emergency services utilization during heat waves in Boston, MA: a difference-in-differences analysis. Annual Meeting of the Society for Epidemiologic Research, Boston, MA, June 10-13, 2025.
4. **Willis M,** Mooney F, Koenig M, Campbell E, Deziel N, Wesselink A, Parker S, Wise L. Associations between Residential Proximity to Oil and Gas Development and Hypertensive Disorders of Pregnancy in a North American Preconception Cohort. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
5. **Willis M,** Mooney F, Campbell E, Koenig M, Nillni Y, Wesselink A, Wise L. Multidimensional Impacts of Oil and Gas Development on Mental Health: Methods & Results from a North American Preconception Cohort Study. Invited symposium presentation. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
6. **Willis M.** The Long and Winding Road: Evaluating the Effectiveness of Decades of Tailpipe Emission Regulations for Infant Health. Invited symposium presentation. Annual Meeting of the Society for Epidemiologic Research, Austin, TX, June 18-21, 2024.
7. **Willis M,** Mooney F, Koenig M, Campbell E, Deziel N, Wesselink A, Parker S, Wise L. Associations between Residential Proximity to Oil and Gas Development and Risk of Hypertensive Disorders of Pregnancy in a North American Preconception Cohort Study. Annual Meeting of the Society for Epidemiologic Research, Austin, TX, June 18-21, 2024.
8. ♦ Lovett S, Wise L, Richardson A, Ncube C, Campbell E, Kirwa K, Rothman K, Wesselink A, **Willis M.** From redlining to reproduction: Examining the influence of historical neighborhood disinvestment on fertility. Annual Meeting of the Society for Epidemiologic Research, Austin, TX, June 18-21, 2024.

9. Buonocore J, **Willis M**. Energy Justice as a Missing Link in Climate and Health: Introducing the Energy Infrastructure, Exposure Intensity, and Equity Indices [EI]³ Database. Climate and Health Annual Conference, Virtual, February 5-7, 2024.
10. **Willis M**. Development of an Integrated Energy & Health Research Agenda. Workshop on Energy and Equity Exposures Database for Population Health. Institute for Global Sustainability, Boston, MA, November 16, 2023.
11. **Willis M**. Associations between Oil and Gas Development and Adverse Pregnancy Outcomes in North America: Current Research and Future Directions. Annual Shale & Public Health Conference by the League of Women Voters of Pennsylvania, Pittsburgh, PA, November 14, 2023.
12. **Willis M**, Harris H, Campbell E, Chaskes M, Sawyer E, Ritz B, Hill E, Hystad P. Quantifying the potential co-benefits of electronic tolling for air pollution, traffic congestion, and infant health in a population-based cohort study. Annual Meeting of the North America Chapter of the International Society for Environmental Epidemiology, Corvallis, OR, June 19-21, 2023.
13. Pescador Jimenez M, Reimer C, Wesselink A, Hystad P, Hatch E, Kirwa K, Gradus J, Wise L, **Willis M**. Residential Proximity to Green Space and Mental Health in a Preconception Cohort. Annual Meeting of the North America Chapter of the International Society for Environmental Epidemiology, Corvallis, OR, June 19-21, 2023.
14. **Willis M**. Influence of Oil and Gas Development on Pregnancy-related Hypertensive Disorders of Pregnancy. Annual Shale & Public Health Conference by the League of Women Voters of Pennsylvania, virtual due to COVID-19, November 15-16, 2022.
15. **Willis M**, Schrank D, Xu C, Harris H, Ritz B, Hill E, Hystad P. A Population-based Cohort study of Traffic Congestion and Term Birth Weight using Vehicle Telematics Data. Annual Meeting of the International Society for Environmental Epidemiology, Athens, Greece, September 18-21, 2022.
16. **Willis M**, Schrank D, Xu C, Harris H, Ritz B, Hill E, Hystad P. A Population-based Cohort study of Traffic Congestion and Term Birth Weight using Vehicle Telematics Data. Annual Meeting of the Society for Epidemiologic Research, Chicago, IL, June 15-17, 2022.
17. **Willis M**, Wesselink A, Gradus J, Nillni Y, Casey J, Hatch E, Wise L. Residential Proximity to Oil and Gas Development and Markers of Psychosocial Stress and Depression in a North American Preconception Cohort Study. Annual Meeting of the Society for Epidemiologic Research, Chicago, IL, June 15-17, 2022.
18. **Willis M**. Associations between Residential Proximity to Oil and Gas Drilling and Infant Health in Texas. Annual Shale & Public Health Conference by the League of Women Voters of Pennsylvania, virtual due to COVID-19, November 17-18, 2021.
19. ♦ Campbell E, Hill E, Sims K, **Willis M**. Associations among Historical Neighborhood Disinvestment, Hazardous Air Pollution, and Current Adult Asthma Prevalence. SERdigital, virtual, November 10, 2021.
20. **Willis M**, Wesselink A, Hatch E, Wise L. Air Pollution and Fecundability in Two Preconception Cohort Studies. Annual Meeting of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 23-26, 2021.
21. **Willis M**, Wesselink A, Hystad P, Kirwa K, Hatch E, Wise L. Residential Green Space and Fecundability in a North American Preconception Cohort Study. Annual Meeting of the Society for Epidemiologic Research, virtual due to COVID-19, June 23-25, 2021.
22. **Willis M**, Wesselink A, Hystad P, Kirwa K, Hatch E, Wise L. Residential Green Space and Fecundability in a North American Preconception Cohort Study. Annual Meeting for the Pediatric and Perinatal Epidemiologic Research, virtual due to COVID-19, June 21-22, 2021.
23. Hystad P, **Willis M**, Hill E. The TRANSIT Accountability Study: Preliminary Results & Methods to Assess Impacts of Local Congestion Programs on Pregnant Women in Texas. CARTEEH Symposium on Transportation, Air Quality, and Health, virtual due to COVID-19, May 18-20, 2021.
24. **Willis M**, Hill E, Boslett A, Kile M, Carozza S, Hystad P. Impacts of Exposure to Oil and Gas Drilling during Pregnancy on Markers of Intrauterine Growth Restriction among Term Infants: A Difference-in-Differences Analysis. Annual Meeting of the Society for Epidemiologic Research, virtual due to COVID-19, December 15-18, 2020.
25. **Willis M**. Shale Gas Development and Pediatric Asthma-related Hospitalizations in Texas. Annual Shale & Public Health Conference by the League of Women Voters of Pennsylvania, virtual due to COVID-19, November 17-18, 2020.
26. ***Willis M**, Hill E, Boslett A, Kile M, Carozza S, Hystad P. Associations between Exposure to Oil and Gas Drilling during Pregnancy and Term Birth Weight: A Difference-in-Differences Analysis. Annual Cascadia Symposium on Occupational, Environmental, and Population Health, Abbotsford, BC, January 9-10, 2020.
27. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Impact of Oil and Gas Drilling Activities on Small-for-Gestational-Age Infants in Texas: A Difference-in-Differences Analysis. Invited symposium presentation. Annual Meeting of the International Society for Environmental Epidemiology, Utrecht, The Netherlands, August 25-28, 2019.
28. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Impact of Regulatory Improvements to Traffic-related Air Pollution on Infant Health: Has Policy Made a Difference? Annual Meeting of the International Society for Environmental Epidemiology, Utrecht, The Netherlands, August 25-28, 2019.
29. ***Willis M**, Hystad P. Cumulative Impact of Traffic-related Air Pollution Regulations on Term Birth Weight. CARTEEH Symposium on Transportation, Air Quality, and Health, Austin, TX, February 18-20, 2019.

30. **Willis M.** Impact of Traffic-related Air Pollution Regulations on Infant Health Outcomes. Annual Semiahmoo Symposium on Occupational, Environmental, and Population Health, Blaine, WA, January 10-11, 2019.
31. **Willis M.** Shale Gas Development and Pediatric Asthma-related Hospitalizations from 2000 to 2010 in Texas. Annual Cascadia Symposium on Occupational, Environmental, and Population Health, Abbotsford, BC, January 4-5, 2018.
32. ***Willis, M.** Unconventional Natural Gas Development and Pediatric Asthma-related Hospitalizations from 2003 to 2014 in Pennsylvania. Annual Semiahmoo Symposium on Occupational, Environmental, and Population Health, Blaine, WA, January 5-6, 2017.

Selected Conference Posters

1. ♦ Campbell E, Vrkljan K, Wesselink A, Koenig M, Kuiper J, Wise L, **Willis M.** A Fetus-at-Risk Approach to Oil and Gas Development and Adverse Birth Outcomes in a Prospective Cohort Study. Annual Meeting of the Society for Epidemiologic Research. Boston, MA, June 10-13, 2025.
2. ♦ Vrkljan K, Wesselink A, Campbell E, Koenig M, Kuiper J, Deziel N, Buonocore J, Nillni Y, Wise L, **Willis M.** Residential Proximity to Oil and Gas Development and Prevalence of Postpartum Depression in a North American Preconception Cohort Study. Annual Meeting of the Society for Epidemiologic Research. Boston, MA, June 10-13, 2025.
3. ♦ Polka E, Buonocore J, Campbell E, **Willis M.** Associations between Oil and Gas Development and Asthma Emergency Department Visits in California. Annual Meeting of the Society for Epidemiologic Research. Boston, MA, June 10-13, 2025.
4. ♦ Rowse M, Clark C, Bond J, Vrkljan K, Polka E, Campbell E, Wesselink A, Aker A, **Willis M.** Oil and Gas Development and Adverse Pregnancy Outcomes: A Conceptual Framework, Narrative Review, and Bias Analysis. Annual Meeting of the Society for Epidemiologic Research. Boston, MA, June 10-13, 2025.
5. **Willis M,** Sheng C, Lovett S, Sims K, Wise L, Cozier Y, Wesselink A. Associations between historical neighborhood redlining and fecundability in a cohort of Black women. Mid-Year Meeting of the Society for Epidemiologic Research. Virtual, February 10-14, 2025.
6. **Willis M,** Koenig M, Mooney F, Campbell E, Deziel N, Joseph N, Wesselink A, Wise L. Residential Proximity to Oil and Gas Development and Risk of Gestational Diabetes in a North American Preconception Cohort Study. Annual Meeting of the American Public Health Association, Minneapolis, MN, October 27-30, 2024.
7. **Willis M,** Black-Ingersoll F, Cesare N, Casey J, Gradus J, Braun D, Dominici F, Nori-Sarma A. Impacts of Oil and Gas Development on Mental Health Hospitalizations Among US Adults: Preliminary Results from the RE-CAP Health Study. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
8. **Willis M,** Mooney F, Weuve J, Hystad P, Fox S, Lees L. Building a Research Framework for the Multidimensional Impacts of Highway Reclamation on Population Health. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
9. ♦ Mooney F, Buonocore J, van Loenen B, Sousa B, Campbell E, **Willis M.** Associations among Clustered Energy Infrastructure and Adult Asthma Prevalence in the United States: A Nationwide Application of the [EI]³ Database. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
10. ♦ Campbell E, Koenig M, Mooney F, Clark C, Deziel N, Casey J, Buonocore J, **Willis M.** A review of spatial-temporal data sources for estimating population-level exposures to oil and gas development in the United States. Annual Meeting of the International Society for Environmental Epidemiology, Santiago, Chile, August 25-28, 2024.
11. **Willis M,** Campbell E, Buonocore J, Polka E, Wesselink A, Wise L. A fossil fuel exposure assessment in a North American preconception cohort study. Annual Meeting of the International Society for Exposure Science, Chicago, IL, August 27-31, 2023.
12. ♦ Campbell E, Wesselink A, Deziel N, Aschengrau A, Wise L, **Willis M.** Reconstructing Historical Exposures to Oil and Gas Development at Critical Windows of Exposure for Reproductive Outcomes in a Preconception Cohort Study. Annual Meeting of the International Society for Exposure Science, Chicago, IL, August 27-31, 2023.
13. **Willis M,** Hill E, Harris L, Ritz B, Hystad P. Assessing the Effect of Decreased Tailpipe Emissions on Adverse Birth Outcomes: A 20-Year Retrospective Accountability Study. Annual Meeting of the Society for Epidemiologic Research, Portland, OR, June 13-16, 2023.
14. **Willis M,** Wise L, Kirwa K, Hystad P, Szpiro A, Kaufman J, Wang T, Joseph M, Yland J, Eisenberg M, Hatch E, Wesselink A. Associations between Residential Proximity to Major Roads and Semen Quality: Results from a North American Preconception Cohort Study. Annual Meeting of the International Society for Environmental Epidemiology, Athens, Greece, September 18-22, 2022.
15. **Willis M,** Hill E, Ncube C, Campbell E, Harris H, Harleman M, Ritz B, Hystad P. Sociodemographic Disparities in Exposure to Traffic-related Air Pollution during Pregnancy and Exposure Changes over a 20 Year Period. Annual Meeting of the International Society for Environmental Epidemiology, Athens, Greece, September 18-22, 2022.
16. ♦ Koenig M, **Willis M,** Wise L, Wesselink A. Associations between Supermarket Access, Neighborhood Income, and Reported Nutrient Intake among a Cohort of Pregnancy Planners. Vital Village National Community Leadership Summit, virtual due to COVID-19, October 18 & 22, 2021.

17. **Willis M**, Orta O, Hatch E, Wesselink A, Kirwa K, Kaufman J, Rothman K, Wise L. A Prospective Cohort Study of Neighborhood Deprivation and Fecundability. Annual Meeting of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 23-26, 2021.
18. **Willis M**, Wesselink A, Hystad P, Kirwa K, Hatch E, Wise L. Associations between Residential Green Space and Fertility in a North American Preconception Cohort Study. Annual Meeting of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 23-26, 2021.
19. **Willis M**, Volkin E, Campbell E, Hill E, Hystad P. Associations between Vehicle Miles Traveled and Ambient Air Pollution at Regulatory Monitoring Sites: A Natural Experiment using the COVID-19 Shutdown. Annual Meeting of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 23-26, 2021.
20. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Assessing the Effectiveness of Vehicle Emission Regulations on Improving Perinatal Health: A Population-Based Accountability Study. Annual Meeting of the Society for Epidemiologic Research, virtual due to COVID-19, December 15-18, 2020.
21. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Associations between Exposure to Oil and Gas Drilling and Hypertensive Conditions during Pregnancy: A Difference-in-Differences Analysis. Annual Meeting of the Society for Pediatric and Perinatal Epidemiologic Research, virtual due to COVID-19, December 15, 2020.
22. **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Associations between Exposure to Oil and Gas Extraction and Pregnancy-Related Hypertension: A Difference-in-Differences Analysis. Annual Conference of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 24-27, 2020.
23. **Willis M**, Kile M, Carozza S, Hystad P. Congenital Anomalies Associated with Oil and Gas Drilling, Resource Extraction, and Water Production: A Population-Based Retrospective Cohort Analysis. Annual Conference of the International Society for Environmental Epidemiology, virtual due to COVID-19, August 24-27, 2020.
24. Hystad P, **Willis M**, Hill E, Larkin A, Molitor J, Ritz B, Perkinson D, Shrank D. The TRANSIT Accountability Study: Assessing Impacts of Vehicle Emission Regulations and Local Congestion Policies on Birth Outcomes in Texas. Health Effects Institute Annual Conference, Boston, MA, April 5-7, 2020. (Canceled due to COVID-19.)
25. **Willis M**, Hill E, Boslett A, Kile M, Carozza S, Hystad P. Environmental Data Integration to Assess the Impacts of Oil and Gas Drilling on Perinatal Health. Annual Environmental and Molecular Toxicology Research Day, Corvallis, OR, January 30, 2020.
26. **Willis M**, Larkin A, Hystad P, and the PURE Study Investigators. Global Patterns of Environmental Inequities within the Prospective Urban and Rural Epidemiology Study. Annual Semiahmoo Symposium on Occupational, Environmental, and Population Health, Blaine, WA, January 10-11, 2019.
27. **Willis M**, Long D, Sonne D, Kile M, Hill E, Hystad P. Propensity Score Matching in Environmental Epidemiology: A Systematic Review and Reporting Recommendations. Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology, Ottawa, ON, August 26-30, 2018.
28. **Willis M**, Hystad P, Denham A, Hill E. Shale Gas Development, Natural Gas Flaring, and Pediatric Asthma Hospitalizations from 2000 to 2010 in Texas, USA. Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology, Ottawa, ON, August 26-30, 2018.
29. **Willis M**, Jusko T, Halterman J, Hill E. Unconventional Natural Gas Development & Pediatric Asthma Hospitalizations: Evidence from Pennsylvania, USA. Population Association of America Annual Meeting, Denver, CO, April 26-28, 2018.

TEACHING EXPERIENCE

Instructor of Record, Department of Epidemiology Sept 2023-present

School of Public Health, Boston University, Boston, MA

Term	Course	Course Title	Students	Credits	Role
Fall 2025	SPH EP 857	Design and Conduct of Cohort Studies	6	2	Instructor
Fall 2024	SPH EP 857	Design and Conduct of Cohort Studies	10	2	Instructor
Fall 2023	SPH EP 857	Design and Conduct of Cohort Studies	7	2	Instructor
Fall 2023	SPH EP 911	Directed Studies in Epidemiology: Quasi-Experimental Methods	1	2	Instructor
Spring 2023	SPH EP 912	Directed Studies in Epidemiology: Quasi-Experimental Methods	1	2	Instructor

T32 Research Rotation Mentor, Department of Environmental Health

Sept 2023-present

School of Public Health, Boston University, Boston, MA

Term	Student	Skill Focus	Rotation Project
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Spring 2024	Flannery Black-Ingersoll	Quasi-experimental methods in spatial epidemiology	An accountability study of highway reclamation projects and neighborhood characteristics in 3 U.S. cities
Summer 2024	Erin Polka	Quasi-experimental methods in spatial epidemiology	A difference-in-differences analysis of oil and gas development and asthma emergency department visits in California

Invited Guest Lecturer, Department of Epidemiology
School of Public Health, Boston University, Boston, MA

Sept 2021-present

Term	Course	Course Title	Lecture Title
Fall 2025	SPH EP 859	Advanced Methods in Reproductive, Perinatal, and Pediatric Epidemiology	Place-Based Determinants of Reproductive Health
Spring 2025	SPH PH 781	Special Topics	Introduction to Quasi-Experimental Methods
Spring 2025, Fall 2025	SPH MC 725	Women, Children and Adolescents: A Public Health Approach	Oil and Gas Development as a Perinatal Health Hazard
Fall 2024	SPH PH 720	Individual, Community, and Population Health	Environmental Strategies to Promote Population Health
Fall 2024, Fall 2025, Spring 2026	SPH EP 775	Social Epidemiology	Environmental, Economic, and Social Consequences of Oil & Gas Development
Fall 2024	N/A	Doctoral Seminar in Epidemiology	Power Structures & Team Science in Research Groups
Spring 2023 Fall 2023 Spring 2024 Fall 2024 Spring 2025 Fall 2025	SPH EP 722	Data Collection Methods for Epidemiologic Research	Integrating Novel Spatial Data into Epidemiologic Research
Spring 2023	SPH EP 780	Chronic & Non-Communicable Disease: A Public Health Persp.	Quantifying Disease, Disability, and Death
Spring 2022 Spring 2023 Spring 2025	SPH EH 730	Methods in Environmental Health Sciences	Multidimensional Hazards of the Oil & Gas Industry
Fall 2021	SPH EP 857	Design and Conduct of Cohort Studies	Recruitment, Retention, and Follow-up in Cohort Studies
Fall 2021	N/A	Doctoral Seminar in Epidemiology	Grant Writing for Early Career Epidemiologists (Panelist)

Invited Guest Lecturer, External to Boston University School of Public Health

Sept 2022-present

Term	Institution	Lecture Title
Spring 2025	College of Public Health, University of South Florida	Oil and Gas Development as a Perinatal Health Hazard

Adjunct Instructor, Department of Public Health and Community Medicine
School of Medicine, Tufts University, Boston, MA

Jan 2022-Aug 2022

Term	Course	Course Title	Students	Credits	Role
Spring 2022	PH240	Environmental Epidemiology	8	3	Instructor (Online)
Summer 2022	PH240	Environmental Epidemiology	15	3	Instructor (Online)

Workshop Teaching Assistant, Skills for Health And Research Professionals (SHARP)
Mailman School of Public Health, Columbia University, New York, NY

June 2021

Term	Course Title	Students	Role
Summer 2022	Google Earth Engine Boot Camp: Methods for Using Satellite and Geospatial Data for Environmental Exposure Science	16	Teaching Assistant

Summer 2021	Google Earth Engine Boot Camp: Methods for Using Satellite and Geospatial Data for Environmental Exposure Science	22	Teaching Assistant
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Invited Guest Lecturer, Environmental Health Program

Sept 2017-Sept 2020

College of Public Health and Human Sciences, Oregon State University, Corvallis, OR

Term	Course	Course Title	Lecture Title
Winter 2020	H512	Introduction to Environmental Health	Energy Production and Population Health
Winter 2020	H612	Doctoral Seminar in Public Health: Research and Practice	Predoctoral Grant Mechanisms, Writing Process, and Application Experiences
Spring 2019	H514	Environment, Safety, and Health	Impacts of Traffic-related Air Pollution Regulations on Infant Health
Winter 2019	H612	Doctoral Seminar in Public Health: Research and Practice	Time Management Strategies for Doctoral Students
Fall 2019	H480	Undergraduate Seminar in Environmental Health	Applications of Environmental Research in Consulting Positions/Internships
Fall 2018, Fall 2017	ALS199	Closing the Gap: Where Science Meets the Media	Shale Gas Development and Pediatric Asthma Hospitalizations

Graduate Teaching Assistant & Lab Instructor, Biostatistics & Global Health Programs

Sep 2016-Jun 2017

College of Public Health and Human Sciences, Oregon State University, Corvallis, OR

Term	Course	Course Title	Students	Credits	Role
Spring 2018	H581	Generalized Linear Modeling & Categorical Data Analysis	61	4	Lab Instructor
Winter 2018	H516	Research Methods in International Health	27	3	Teaching Assistant
Winter 2018	H580	Linear Regression & Analysis of Time to Event Data	26	4	Lab Instructor
Fall 2017	H524	Introduction to Biostatistics	22	4	Lab Instructor

STUDENT & TRAINEE MENTORSHIP

Research Staff

▪ Fintan Mooney, Research Data Analyst, Boston University	Supervisor	2023-2024
▪ Martha Koenig, Research Fellow, Boston University	Supervisor	2023-present
▪ Erin Campbell, Research Assistant, Boston University	Supervisor	2022-present

Postdoctoral Level

▪ Stephanie Grady, Postdoctoral Research Associate in Environmental Health, Boston University <u>Project:</u> Drilling down the noise: Assessment and characterization of noise exposure in communities surrounding oil and gas sites <u>Award:</u> BUSPH Postdoctoral Ignition Award, (Primary mentor: Willis)	Research mentor	2024-present
▪ Cassandra Clark, Postdoctoral Fellow in Pediatric Epidemiology & Clinical Research, University of Minnesota <u>Project:</u> A national analysis of public-school proximity to oil and gas development in the United States.	Research mentor	2024-present
▪ Lara Schwarz, Division of Environmental Health Sciences, University of California, Berkeley School of Public Health <u>Project:</u> Residential proximity to oil and gas development and socio-economic conditions: A comparative analysis of 33 countries	Research mentor	2024-present
▪ Julia Bond, Postdoctoral Research Associate in Community Health Sciences, Boston University	Career development	2024-2025
▪ Samantha Schildroth, Postdoctoral Research Associate in Epidemiology, Boston University	Career development	2024-2026

Doctoral Level

<ul style="list-style-type: none"> ▪ Kaylin Vrkljan, PhD in Epidemiology, Boston University <u>Project:</u> Quasi-experimental Studies of Disasters and Inpatient Psychiatric Hospitalizations among Medicaid Beneficiaries 	Primary mentor & F31 sponsor (under review)	2024-present
<ul style="list-style-type: none"> ▪ Lauren Linde, PhD in Epidemiology, Boston University <u>Project:</u> Effect of wildfire smoke exposure on the development of tuberculosis and mortality due to COVID-19 	Dissertation committee member	2025-present
<ul style="list-style-type: none"> ▪ Suzanne McLone, PhD in Epidemiology, Boston University <u>Project:</u> Residential proximity to community firearm violence and mental health 	Dissertation committee member & F31 co-sponsor (under review)	2025-present
<ul style="list-style-type: none"> ▪ Erin Polka, PhD in Environmental Health, Boston University <u>Project:</u> From extraction to energy transition: Health impacts and equity across the oil & gas supply chain 	Dissertation committee member	2024-present
<ul style="list-style-type: none"> ▪ Flannery Black-Ingersoll, PhD in Environmental Health, Boston University <u>Project:</u> Extreme heat and mental health: leveraging big data to assess local, regional, and national health disparities across the U.S. 	Dissertation committee member	2024-present
<ul style="list-style-type: none"> ▪ Sharonda Lovett, PhD in Epidemiology, Boston University <u>Project:</u> Historical and present-day influences of neighborhood context on fertility <u>Award:</u> BUSPH Predoctoral Ignition Award (Primary mentor: Willis); NIH supplement for career development (Primary mentor: Willis) 	Dissertation committee member	2023-2025
<ul style="list-style-type: none"> ▪ Laura Buckley, PhD in Environmental Health, Boston University <u>Project:</u> The health and equity implications of alternative strategies to reduce transportation-related air pollution 	Dissertation committee member	2022-2024
<ul style="list-style-type: none"> ▪ Lena Harris, PhD in Economics, University of Rochester <u>Project:</u> A nationwide retrospective cohort study of lake desiccation and pregnancy outcomes 	Research mentor	2022-2025

Masters Level

<ul style="list-style-type: none"> ▪ Tiffany Mai, MS in Epidemiology, Boston University <u>Project:</u> TBD – Spatial-temporal dimensions of Medicare beneficiaries who use durable medical equipment 	Research mentor & thesis advisor	2025-present
<ul style="list-style-type: none"> ▪ Hannah Suave, MS in Epidemiology, Boston University <u>Project:</u> TBD – Spatial-temporal dimensions of Medicare beneficiaries who use durable medical equipment 	Research mentor & thesis advisor	2025-present
<ul style="list-style-type: none"> ▪ Erin Plumber, MPH in Epidemiology, Tufts University <u>Project:</u> A framework for understanding the influence of oil and gas development on the Osage nation: Implications for population health and future research 	Research mentor & practicum advisor	2025-2025
<ul style="list-style-type: none"> ▪ Marijke Rowse, MPH in Epidemiology and Biostatistics, Boston University <u>Project:</u> A narrative review on oil and gas development and adverse pregnancy outcomes 	Research mentor & practicum advisor	2024-2025
<ul style="list-style-type: none"> ▪ Toshiaki Komura, MPH in Epidemiology and Biostatistics, Boston University <u>Project:</u> A difference-in-differences analysis of oil and gas development and total fertility rate in the United States <u>Award:</u> BUSPH Colton Prize for Excellence in Epidemiology 	Research mentor	2022-2024
<ul style="list-style-type: none"> ▪ Erin Campbell, MPH in Environmental Health Science and Policy, George Washington University <u>Project:</u> A fetus-at-risk approach to oil and gas development and adverse birth outcomes in a prospective cohort study <u>Award:</u> First Prize Poster, Climate Change and Maternal Health Section, GWSPH Research Day 2025 Environmental and Occupational Health Culminating Experience Award, GWSPH. 	Research mentor & practicum advisor	2023-2025

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| <ul style="list-style-type: none"> ▪ Martha Koenig, MPH in Epidemiology and Biostatistics, Boston University
 <u>Project:</u> Associations among supermarket access, neighborhood income, and reported nutrient intake in a cohort of pregnancy planners | Practicum advisor | 2021-2022 |
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Undergraduate Level

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| <ul style="list-style-type: none"> ▪ Evan Volkin, BS in Economics, Business Analytics, University of Rochester
 <u>Project:</u> Spatial-temporal changes in traffic-related air pollution in 2020: A natural experiment using COVID-19
 (Poster at International Society of Environmental Epidemiology) | Research mentor | 2021-2022 |
| <ul style="list-style-type: none"> ▪ Erin Campbell, BS in Economics, Envi. Health, University of Rochester
 <u>Project:</u> Associations between historical neighborhood disinvestment and modern asthma prevalence: A national study on the influence of redlining. (Thesis published in <i>Environ. Health Perspect.</i>) | Research mentor | 2020-2021 |

SERVICE & COMMITTEES

External Appointments & Contributions

International Society for Environmental Epidemiology

- | | |
|--|-----------------|
| ▪ Committee Chair, Communications Committee | 2024-present |
| ▪ Committee Chair, Student and New Researchers Network Steering Committee | 2020-2022 |
| ▪ Member, Communications Committee | 2020-2023 |
| ▪ Member, Fellows Selection Committee | 2021-present |
| ▪ Member, International Scientific Committee for the Annual Conference | 2021-2022, 2025 |
| ▪ Member, Scientific Planning Committee for the North American Regional Conference | 2022-2023 |
| ▪ Member, North America Regional Conference Organizing Committee | 2022-2023 |
| ▪ Symposium Chair, Annual Conference | 2018 |
| ▪ Session Chair/Co-chair, Annual Conference | 2019, 2021-2024 |

Society for Epidemiologic Research

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| ▪ Symposium Chair, Annual Conference | 2024 |
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National Institutes of Health

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| ▪ Invited Reviewer, NIEHS East Palestine Research Opportunity Announcement | 2025 |
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Health Effects Institute

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| ▪ Invited Reviewer, Special Report on Cumulative Impact Assessment | 2025 |
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Science Communication Network

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| ▪ Member, Oil & Gas Science Advisory Board | 2021-2022 |
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The Straight Scoop on Shale, League of Women Voters of Pennsylvania Citizen Education Fund

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| ▪ Member, Technical Advisory Committee for the Annual Conference | 2022 |
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Reviewer, Harvard-NIOSH Early Career Researcher Pilot Award

2022

Internal Appointments

Boston University

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| ▪ Departmental Representative, Faculty Senate (<u>elected</u>) | 2024-present |
| ▪ Lead Organizer, Data Science Seminar Series | 2023-present |
| ▪ Member, Inclusive Department Culture Subcommittee, Department of Epidemiology | 2023-2024 |
| ▪ At-Large Member, Faculty Senate (<u>elected</u>) | 2022-2023 |
| ▪ Member, MPH Admissions Committee | 2022-2024 |
| ▪ Member, Anti-Racism in Departmental Research Agenda, Department of Epidemiology | 2023-2024 |
| ▪ MPH Integrative Learning Experience (ILE) Advisor, Department of Epidemiology | 2023 |
| ▪ Reviewer, KL2 Applications, Clinical and Translational Science Institute | 2023 |

Oregon State University

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| ▪ Member, Student Evaluation Committee for Promotion and Tenure | 2017, 2019 |
| ▪ Member, Strategic Planning Task Force on Programmatic Relevance | 2018 |

PEER REVIEW & EDITORIAL BOARD WORK

Editorial Board

Member, Journal of Exposure Science and Environmental Epidemiology 2023-present

Ad Hoc Peer Review

2020-present

Air Quality, Atmosphere, and Health
American Journal of Epidemiology
American Journal of Public Health
Atmospheric Environment
Energy Research and Social Science
Environmental Health
Environmental Health Perspectives
Environment International
Environmental Research
Environmental Research Letters
Environmental Research: Health
Environmental Science and Technology
Fertility and Sterility
Health and Place
Human Reproduction
International Journal of Epidemiology
International Journal of Hygiene and Environmental Health
International Journal of Sustainable Transportation
Journal of the American Medical Association (JAMA)
JAMA Network Open
Journal of Exposure Science and Environmental Epidemiology
Journal of City Climate Policy and Economy
Lancet Planetary Health
Paediatric and Perinatal Epidemiology
Science Advances
Social Science and Medicine

SELECTED PRESS

Associated with: Buonocore J, Mooney F, van Loenen B, Sousa B, Campbell E, Nori-Sarma A, Fabian P, Willis M. High Populations Near Fossil Fuel Energy Infrastructure Across the Supply Chain and Implications for an Equitable Energy Transition.

- CBS News. "Nearly 47 million Americans at risk of health hazards from fossil fuel infrastructure, study finds." CBS [New York, NY]. 18 Nov 2025. <https://www.cbsnews.com/video/14-percent-americans-health-risk-fossil-fuel-infrastructure-study>.

Associated with: **Willis M**, Casey J, Buonocore J. Potential Health Hazards of Cryptocurrency Mining: Protecting Health in a "Digital Oil Boom."

- Rowe N. "How Trump's love for crypto threatens US residents' peace: 'I just want quiet'." *The Guardian* [London, UK]. 4 May 2025. <https://www.theguardian.com/technology/2025/may/04/cryptocurrency-mining-facilities-noise-trump>.
- Cooke E. "Potential health hazards of cryptocurrency mines laid bare by scientists." *LiveScience* [New York, NY] 18 Oct 2024. <https://www.livescience.com/health/potential-health-hazards-of-cryptocurrency-mines-laid-bare-by-scientists>

Associated with: **Willis M**, Campbell E, Selbe S, Koenig M, Gradus J, Nillni Y, Deziel N, Casey J, Hatch E, Wesselink A, Wise L. Residential Proximity to Oil and Gas Development and Markers of Psychosocial Stress and Depression in a North American Preconception Cohort Study, 2013-2023.

- Putol R. "Living near oil and gas sites linked to hidden health issues." *Earth.com* [Telluride, CO] 15 Jul 2024. <https://www.earth.com/news/living-near-oil-and-gas-sites-linked-to-hidden-health-issues/>
- Marusic K. "Living near oil and gas operations linked to worse mental health in people hoping to become pregnant." *Environmental Health News* [Montana] 25 Jul 2024. <https://www.ehn.org/fracking-mental-health-2668799448.html>

Associated with: Buonocore J, van Loenen B, Sousa B, Mooney F, **Willis M**. 2024, "EI3 Infrastructure Counts by US Census Tract" (data set).

- Jimenez J. "More fossil fuel facilities are in environmental justice communities, BU researchers find." *The Boston Globe* [Boston, MA] 3 Jul 2024. <https://www.bostonglobe.com/2024/07/03/metro/boston-university-research-fossil-fuel-facilities/>

- Bleichfeld A. "Communities of color host greater share of damaging energy infrastructure." *The Bay State Banner* [Boston, MA] 15 May 2024. <https://baystatebanner.com/2024/05/15/communities-of-color-host-greater-share-of-damaging-energy-infrastructure/>

Associated with: **Willis M**, Schrank D, Xu C, Harris H, Ritz B, Hill E, Hystad P. A Population-based Cohort Study of Traffic Congestion and Infant Growth using Connected Vehicle Data.

- Calma J. "Traffic jams are tied to lower birth weights, study finds." *The Verge* [Washington, D.C.] 28 Oct 2022. <https://www.theverge.com/2022/10/28/23426970/birth-weight-infant-traffic-congestion-lower-health>
- Baisas L. "Highway and traffic pollution could be connected to low birthweight." *Popular Science* [New York] 28 Oct 2022. <https://www.popsci.com/science/traffic-congestion-low-birthweight/>

Associated with: **Willis M**, Orta O, Ncube C, Wesselink A, Đoàn L, Kirwa K, Boynton-Jarrett R, Hatch E, Wise L. Analysis of Neighborhood Socioeconomic Disadvantage and Fertility.

- Kronemyer B. "Neighborhood disadvantage and fertility rates" *Contemporary OB/GYN* [Washington, D.C.] 8 Aug 2022. <https://www.contemporaryobgyn.net/view/neighborhood-disadvantage-and-fertility-rates>

Associated with: **Willis M**, Hill E, Kile M, Carozza S, Hystad P. Associations between Residential Proximity to Oil and Gas Extraction and Hypertensive Conditions during Pregnancy: A Difference-in-Differences Analysis in Texas, 1996-2009.

- Cunningham, N. "Living Closer to Oil and Gas Drilling Linked to Higher Risk of Pregnancy Complications, New Study Finds" *DeSmog* [Seattle] 11 Jan 2022. <https://www.desmog.com/2022/01/11/proximity-oil-gas-drilling-hypertension-pregnancy-willis/>.
- Andrews E. "Fracking, abortion, and the challenge of raising a family in southwestern Pennsylvania" *Grist* [Seattle] 7 Nov 2022. <https://grist.org/health/fracking-abortion-and-the-challenge-of-raising-a-family-in-southwestern-pennsylvania/>

Associated with: **Willis M**, Hill E, Boslett A, Kile M, Carozza S, Hystad P. Associations between Residential Proximity to Oil and Gas Drilling and Term Birth Weight and Small for Gestational Age Infants in Texas: A Difference-in-Differences Analysis.

- Sadasivam N, Andrews E. "What overturning Roe v. Wade means for pregnant people living in pollution hot spots." *Salon* [Seattle] 10 Jul 2022. https://www.salon.com/2022/07/10/what-overturning-roe-v-wade-means-for-pregnant-people-in-pollution-hotspots_partner/

Associated with: **Willis M**, Hystad P, Denham A, Hill E. Natural Gas Development, Flaring Practices, and Pediatric Asthma Hospitalizations from 2000 to 2010 in Texas, USA.

- Shrogren, E. "In the Drill Zone, Children's Health Is Looking Bleak." *The Texas Observer* [Austin] 15 Jun 2021. <https://www.texasobserver.org/in-the-drill-zone-childrens-health-is-looking-bleak/>.