

# Ander Wilson, PhD

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## Education

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<b>North Carolina State University</b> , Raleigh, NC	2014
PhD, Statistics	
Thesis: <i>Advances in Bayesian Methods for High-Dimensional Environmental Data</i>	
Advisor: Brian Reich	
<b>North Carolina State University</b> , Raleigh, NC	2011
Masters of Statistics	
<b>University of Vermont</b> , Burlington, VT	2004
Bachelor of Arts, Mathematics, <i>Cum Laude</i>	

## Experience

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<b>Colorado State University</b> , Fort Collins, CO	2016 – Present
Associate Professor, Department of Statistics	2022 – Present
Assistant Professor, Department of Statistics	2016 – 2022
Faculty Member, Partnership on Air Quality Climate and Health	2016 – Present
<b>Harvard T. H. Chan School of Public Health</b> , Boston, MA	2014 – 2016
Postdoctoral Research Fellow, Department of Biostatistics	
Mentors: Brent A. Coull and Francesca Dominici	
<b>Mathematica Policy Research, Inc.</b> , Cambridge, MA	2014 – 2016
On-Call Statistician	
<b>U.S. Environmental Protection Agency</b> , Chapel Hill, NC	2012 – 2014
Oak Ridge Institute for Science and Education (ORISE) Fellow	
Mentors: Ana G Rappold and Lucas Neas	
<b>U.S. Environmental Protection Agency</b> , RTP, NC	2010 – 2012
Student Volunteer Researcher, National Center for Computational Toxicology	
Mentor: David Reif	
<b>North Carolina State University</b> , Raleigh, NC	2009 – 2012
NIH Trainee in Biostatistics and Statistical Genetics	
<b>Mathematica Policy Research, Inc.</b> , Cambridge, MA	2005 – 2011
On-Call Senior Programmer Analyst	2009 – 2011
Senior Programmer Analyst	2008 – 2009
Research Assistant/Programmer	2005 – 2007

## Awards

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Early Investigator Award, ASA Section on Statistics and the Environment	2024
Best Environmental Epidemiology Paper (co-author), International Society for Environmental Epidemiology	2020
Rose Traveling Fellowship, Harvard T. H. Chan School of Public Health	2015
ORISE pre-doctoral fellowship, US EPA	2012-2014

## Publications

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\* indicates current or former student.

† indicates part of consortium on paper.

### Published in Peer-Reviewed Journals

- [1] Cowell, W, Hsu, L, Just, A, Kloog, I, Coull, B, **Wilson, A**, Wheaton, W, Cajka, J, Moore, J, Carroll, K, Gilliland, FD, Bloemsma, L, Padula, AM, Kerver, J, Ghassabian, A, Carmargo, CA, Dabelea, D, Koinis-Mitchell, D, D'Sa, VA, Haktanir-Abul, M, Braun, J, Croen, L, Hartert, T, Shirashita, A, Hipwell, AE, Karagas, M, Peacock, J, Neiderhiser, J, Leve, L, Ganiban, J, Litonjua, A, McEvoy, C, Haag, M, Schmidt, R, Goodrich, A, Lyall, K, Volk, H, O'Connor, TG, Rich, DQ, Porucznik, C, Wright, RJ, on behalf of program collaborators for Environmental influences on Child Health Outcomes Cohort Consortium, "PM2.5 in relation to birthweight: exploring critical windows of susceptibility by infant sex, race/ethnicity and U.S. region in the ECHO Cohort". *JAMA Network Open* (In press).
- [2] Jin, Y, Molstad, AJ, **Wilson, A**, Antonelli, J, "Smooth and shape-constrained quantile distributed lag models". *Biometrics* (In press). doi: 10.1093/biomtc/ujaf101. arXiv: 2408.08450.
- [3] McGee, G, Coull, BA, **Wilson, A**, "Collapsed Kernel Machine Regression". *Statistics in Medicine* (In press). doi: 10.1002/sim.70258. arXiv: 2409.18005.
- [4] \*Demanis, D, Aldana, SI, Wright, RO, Wright, R, Baccarelli, A, Colicino, E, **Wilson, A**, Keller, KP, "Distributed lag interaction model with index modification". *Biostatistics* 26.1 (June 2025), kxaf017. doi: 10.1093/biostatistics/kxaf017. arXiv: 2504.06363.
- [5] \*Im, S, **Wilson, A**, Mork, D, "Structured Bayesian Regression Tree Models for Estimating Distributed Lag Effects: The R Package *dlmmtree*". *The R Journal* 17 (1 2025). <https://doi.org/10.32614/RJ-2025-007>. pp. 136–159. doi: 10.32614/RJ-2025-007.
- [6] Aldana, SI, \*Demanis, D, Valvi, D, Just, AC, Gutiérrez-Avila, I, Estrada-Gutierrez, G, Téllez Rojo, MM, Wright, RO, Baccarelli, AA, Wu, H, Keller, KP, **Wilson, A**, Colicino, E, "Windows of Susceptibility to Air Pollution During and Surrounding Pregnancy in Relation to Longitudinal Maternal Measures of Adiposity and Lipid Profiles". *Environmental Research* (2025), p. 121198. doi: 10.1016/j.envres.2025.121198.
- [7] Chiu, YHM, Coull, BA, **Wilson, A**, Hsu, HHL, Xhani, N, Schwartz, J, Colicino, E, Robert O. Wright, M, Wright, RJ, "Air pollution mixture exposure during pregnancy and postpartum psychological functioning: racial/ethnic-and fetal sex-specific associations". *Journal of Exposure Science and Environmental Epidemiology* 35.4 (2025), pp. 548–556. doi: 10.1038/s41370-024-00726-2.

- [8] McCann, ME, Hsu, HHL, Schechter, M, Coull, BA, **Wilson, A**, Xhani, N, Factor, R, Kloog, I, Wright, RJ, "Prenatal fine particulate matter and childhood asthma: Effect modification by community safety and child sex". *Scientific Reports* 15.1 (2025), p. 35665. doi: 10.1038/s41598-025-19639-7.
- [9] \*Demateis, D, Keller, K, Rojas-Rueda, D, Kioumourtzoglou, MA, **Wilson, A**, "Penalized Distributed Lag Interaction Model: Air Pollution, Term Birth Weight, and Neighborhood Vulnerability". *Environmetrics* 35.4 (June 2024). doi: 10.1002/env.2843. arXiv: 2401.02939.
- [10] \*Mork, D, Kioumourtzoglou, MA, Weisskopf, M, Coull, BA, **Wilson, A**, "Heterogeneous Distributed Lag Models to Estimate Personalized Effects of Maternal Exposures to Air Pollution". *Journal of the American Statistical Association* 119.545 (Jan. 2024), pp. 14–26. doi: 10.1080/01621459.2023.2258595. arXiv: 2109.13763.
- ★ Included in ASA Editors' Choice Collections.
- [11] \*Mork, D, **Wilson, A**, "Incorporating Prior Information Into Distributed Lag Nonlinear Models With Zero-Inflated Monotone Regression Trees". *Bayesian Analysis* (2024), pp. 1–29. doi: 10.1214/23-BA1412.
- [12] \*Pugh, S, Fosdick, BK, Nehring, M, Gallichotte, EN, VandeWoude, S, **Wilson, A**, "Estimating cutoff values for diagnostic tests to achieve target specificity using extreme value theory". *BMC Medical Research Methodology* 24.1 (Feb. 2024), p. 30. doi: 10.1186/s12874-023-02139-5.
- [13] \*Pugh, S, Levin, AT, Meyerowitz-Katz, G, Soman, S, Owusu-Boaitey, N, Zwi, AB, Malani, A, **Wilson, A**, Fosdick, BK, "A hierarchical Bayesian model for estimating age-specific COVID-19 infection fatality rates in developing countries". *Statistics in Medicine* 43.30 (Dec. 2024), pp. 5667–5680. doi: 10.1002/sim.10259. arXiv: 2308.04012.
- [14] Antonelli, J, **Wilson, A**, Coull, BA, "Multiple exposure distributed lag models with variable selection". *Biostatistics* 25.1 (Jan. 2024), pp. 1–19. doi: 10.1093/biostatistics/kxac038. arXiv: 2107.14567.
- [15] Howe, CM, Coull, BA, Papatheodorou, S, Luttmann-Gibson, H, Rifas-Shiman, SL, **Wilson, A**, Kloog, I, Di, Q, Zanobetti, A, Koutrakis, P, Schwartz, JD, Oken, E, Gold, DR, "Relative humidity, temperature, and hypertensive disorders of pregnancy: Findings from the Project Viva cohort". *Environmental Research* 257 (2024), p. 119211. doi: 10.1016/j.envres.2024.119211.
- [16] Hsu, HHL, Coull, BA, Schnaas, L, Osorio-Valencia, E, Chiu, YHM, **Wilson, A**, Just, AC, Kloog, I, Bellinger, D, Téllez-Rojo, MM, Wright, RO, "Sensitive Windows of Prenatal Air Pollution and Cognitive Functioning in Pre-School Age Mexican Children". *Environmental Epidemiology* 8.1 (2024), e291. doi: 10.1097/EE9.0000000000000291.
- [17] Kodros, JK, Carter, E, Oke, O, **Wilson, A**, Jathar, SH, Magzamen, S, "Cumulative Exposures to Environmental and Socioeconomic Risk Factors in Milwaukee County, Wisconsin". *GeoHealth* 8.5 (2024), e2023GH000927. doi: 10.1029/2023GH000927.
- [18] Leung, M, Rowland, ST, Modest, AM, Hacker, MR, Papatheodorou, S, Wei, Y, Schwartz, J, Coull, BA, **Wilson, A**, Kioumourtzoglou, MA, Weisskopf, MG, "A novel approach for inferring effects on pregnancy loss". *American Journal of Epidemiology* (Dec. 2024), kwae475. doi: 10.1093/aje/kwae475. eprint: <https://academic.oup.com/aje/advance-article-pdf/doi/10.1093/aje/kwae475/61277458/kwae475.pdf>.

- [19] Wright, RO, Makris, KC, Natsiavas, P, Fennell, T, Rushing, BR, **Wilson, A**, Exposomics Consortium, M, "A long and winding road: culture change on data sharing in exposomics". *Exposome* 4.1 (Apr. 2024), osae004. doi: 10.1093/exposome/osae004.
- [20] \*Hoskovec, L, Koslovsky, MD, Koehler, K, Good, N, Peel, JL, Volckens, J, **Wilson, A**, "Infinite hidden Markov models for multiple multivariate time series with missing data". *Biometrics* 79 (3 Sept. 2023), pp. 2592–2604. doi: 10.1111/biom.13715.  
 ★ ASA Environmental Section Student Paper Competition honorable mention, 2021.
- [21] \*Mork, D, **Wilson, A**, "Estimating perinatal critical windows of susceptibility to environmental mixtures via structured Bayesian regression tree pairs". *Biometrics* 79.1 (Mar. 2023), pp. 449–461. doi: 10.1111/biom.13568. arXiv: 2102.09071.  
 ★ Health Effects Institute Jane Warren Trainee Conference Award winner, 2021.
- [22] Burrows, K, Anderson, GB, Yan, M, **Wilson, A**, Sabath, MB, Son, JY, Kim, H, Dominici, F, Bell, ML, "Health disparities among older adults following tropical cyclone exposure in Florida". *Nature Communications* 14 (1 Apr. 2023), p. 2221. doi: 10.1038/s41467-023-37675-7.
- [23] Chiu, YHM, **Wilson, A**, Hsu, HHL, Jamal, H, Mathews, N, Kloog, I, Schwartz, J, Bellinger, DC, Xhani, N, Wright, RO, Coull, BA, Wright, RJ, "Prenatal ambient air pollutant mixture exposure and neurodevelopment in urban children in the Northeastern United States". *Environmental Research* 233 (2023), p. 116394. doi: 10.1016/j.envres.2023.116394.
- [24] Hsu, HHL, **Wilson, A**, Schwartz, J, Kloog, I, Wright, RO, Coull, BA, Wright, RJ, "Prenatal Ambient Air Pollutant Mixture Exposure and Early School-age Lung Function". *Environmental Epidemiology* 7.2 (Apr. 2023), e249. doi: 10.1097/EE9.000000000000249.
- [25] Leung, M, Rowland, ST, Coull, BA, Modest, AM, Hacker, MR, Schwartz, J, Kioumourtzoglou, MA, Weisskopf, MG, **Wilson, A**, "Bias Amplification and Variance Inflation in Distributed Lag Models Using Low-Spatial-Resolution Data". *American Journal of Epidemiology* 192.4 (Apr. 2023), pp. 644–657. doi: 10.1093/aje/kwac220.
- [26] Martenies, SE, **Wilson, A**, \*Hoskovec, L, Bol, KA, Burkett, TL, Podewils, LJ, Magzamen, S, "The COVID-19-wildfire smoke paradox: Reduced risk of all-cause mortality due to wildfire smoke in Colorado during the first year of the COVID-19 pandemic". *Environmental Research* 225 (May 2023), p. 115591. doi: 10.1016/j.envres.2023.115591.
- [27] McGee, G, **Wilson, A**, Coull, BA, Webster, TF, "Incorporating biological knowledge in analyses of environmental mixtures and health". *Statistics in Medicine* 42.17 (July 2023), pp. 3016–3031. doi: 10.1002/sim.9765. arXiv: 2204.00040.
- [28] McGee, G, **Wilson, A**, Webster, TF, Coull, BA, "Bayesian multiple index models for environmental mixtures". *Biometrics* 79.1 (Mar. 2023), pp. 462–474. doi: 10.1111/biom.13569. arXiv: 2101.05352.
- [29] Saddiki, H, Zhang, X, Colicino, E, **Wilson, A**, Kloog, I, Wright, RO, Wright, RJ, Lesseur, C, "DNA methylation profiles reveal sex-specific associations between prenatal ambient air pollution and placenta cell type composition in the PRISM cohort study". *Clinical Epigenetics* 15.188 (2023).

- [30] \*Hoskovec, L, Martenies, S, Burkett, TL, Magzamen, S, **Wilson, A**, "Association between air pollution and COVID-19 disease severity via Bayesian multinomial logistic regression with partially missing outcomes". *Environmetrics* 33 (7 Nov. 2022). doi: 10.1002/env.2751.
- [31] \*Mork, D, **Wilson, A**, "Treed distributed lag nonlinear models". *Biostatistics* 23.3 (July 2022), pp. 754–771. doi: 10.1093/biostatistics/kxaa051.
- [32] Benka-Coker, ML, Clark, ML, Rajkumar, S, Young, BN, Bachand, AM, Brook, RD, Nelson, TL, Volckens, J, Reynolds, SJ, **Wilson, A**, L'Orange, C, Good, N, Quinn, C, Koehler, K, Africano, S, Pinel, ABO, Diaz-Sanchez, D, Neas, L, Peel, JL, "Household air pollution from wood-burning cookstoves and C-reactive protein among women in rural Honduras". *International Journal of Hygiene and Environmental Health* 241 (Apr. 2022), p. 113949. doi: 10.1016/j.ijheh.2022.113949.
- [33] Chiu, YHM, Carroll, KN, Coull, BA, Kannan, S, **Wilson, A**, Wright, RJ, "Prenatal Fine Particulate Matter, Maternal Micronutrient Antioxidant Intake, and Early Childhood Repeated Wheeze: Effect Modification by Race/Ethnicity and Sex". *Antioxidants* 11.2 (2022). doi: 10.3390/antiox11020366.
- [34] Martenies, SE, \*Hoskovec, L, **Wilson, A**, Moore, BF, Starling, AP, Allshouse, WB, Adgate, JL, Dabelea, D, Magzamen, S, "Using non-parametric Bayes shrinkage to assess relationships between multiple environmental and social stressors and neonatal size and body composition in the Healthy Start cohort". *Environmental Health* 21.1 (Nov. 2022), p. 111. doi: 10.1186/s12940-022-00934-z.
- [35] Rahman, F, Coull, BA, Carroll, KN, **Wilson, A**, Just, AC, Kloog, I, Zhang, X, Wright, RJ, Chiu, YHM, "Prenatal PM2.5 exposure and infant temperament at age 6 months: Sensitive windows and sex-specific associations". *Environmental Research* 206 (2022), p. 112583. doi: 10.1016/j.envres.2021.112583.
- [36] Rowland, ST, Chillrud, LG, Boehme, AK, **Wilson, A**, Rush, J, Just, AC, Kioumourtzoglou, MA, "Can weather help explain 'why now?': The potential role of hourly temperature as a stroke trigger". *Environmental Research* 207 (1 May 2022), p. 112229. doi: 10.1016/j.envres.2021.112229.
- [37] Walker, ES, Fedak, KM, Good, N, Balmes, J, Brook, RD, Clark, ML, Cole-Hunter, T, Devlin, RB, L'Orange, C, Luckasen, G, Mehaffy, J, Shelton, R, **Wilson, A**, Volckens, J, Peel, JL, "Acute differences in blood lipids and inflammatory biomarkers following controlled exposures to cookstove air pollution in the STOVES study". *International Journal of Environmental Health Research* 32 (3 Mar. 2022), pp. 565–578. doi: 10.1080/09603123.2020.1785402.
- [38] **Wilson, A**, Hsu, HHL, Chiu, YHM, Wright, RO, Wright, RJ, Coull, BA, "Kernel machine and distributed lag models for assessing windows of susceptibility to environmental mixtures in children's health studies". *The Annals of Applied Statistics* 16.2 (June 2022). doi: 10.1214/21-AOAS1533. arXiv: 1904.12417.
- [39] \*Hoskovec, L, Benka-Coker, W, Severson, R, Magzamen, S, **Wilson, A**, "Model choice for estimating the association between exposure to chemical mixtures and health outcomes: A simulation study". *PLOS ONE* 16.3 (Mar. 2021), e0249236. doi: 10.1371/journal.pone.0249236.
- ★ Health Effects Institute student/postdoc travel award winner, 2019.

- [40] Cole-Hunter, T, Dhingra, R, Fedak, KM, Good, N, L'Orange, C, Luckasen, G, Mehaffy, J, Walker, E, **Wilson, A**, Balmes, J, Brook, RD, Clark, ML, Devlin, RB, Volckens, J, Peel, JL, "Short-term differences in cardiac function following controlled exposure to cookstove air pollution: The subclinical tests on volunteers exposed to smoke (STOVES) study". *Environment International* 146 (Jan. 2021), p. 106254. doi: 10.1016/j.envint.2020.106254.
- [41] Magzamen, S, Gan, RW, Liu, J, O'Dell, K, Ford, B, Berg, K, Bol, K, **Wilson, A**, Fischer, EV, Pierce, JR, "Differential Cardiopulmonary Health Impacts of Local and Long-Range Transport of Wildfire Smoke". *GeoHealth* 5.3 (Mar. 2021). doi: 10.1029/2020GH000330.
- [42] Martenies, SE, \*Hoskovec, L, **Wilson, A**, Allshouse, WB, Adgate, JL, Dabelea, D, Jathar, S, Magzamen, S, "Assessing the Impact of Wildfires on the Use of Black Carbon as an Indicator of Traffic Exposures in Environmental Epidemiology Studies". *GeoHealth* 5.6 (June 2021), pp. 424–430. doi: 10.1029/2020GH000347.
- [43] Tryner, J, Phillips, M, Quinn, C, Neymark, G, **Wilson, A**, Jathar, SH, Carter, E, Volckens, J, "Design and testing of a low-cost sensor and sampling platform for indoor air quality". *Building and Environment* (Sept. 2021), p. 108398. doi: 10.1016/j.buildenv.2021.108398.
- [44] Yan, M, **Wilson, A**, Dominici, F, Wang, Y, Al-Hamdan, M, Crosson, W, Schumacher, A, Guikema, S, Magzamen, S, Peel, JL, Peng, RD, Anderson, GB, "Tropical Cyclone Exposures and Risks of Emergency Medicare Hospital Admission for Cardiorespiratory Diseases in 175 Urban United States Counties, 1999-2010". *Epidemiology* 32.3 (May 2021), pp. 315–326. doi: 10.1097/EDE.0000000000001337.
- [45] Yuan, B, Osorio-Yáñez, C, Fang, J, Zhao, L, **Wilson, A**, Sanchez-Guerra, M, Liu, H, Li, PH, Guo, L, "Effect of Radiation, Organic Solvents and Vibration Occupational Exposure on the Thyroid Disease: Results from Project ELEFANT". *Aerosol and Air Quality Research* 21 (9 2021), p. 210085.
- [46] Benka-Coker, ML, Peel, JL, Volckens, J, Good, N, Bilsback, KR, L'Orange, C, Quinn, C, Young, BN, Rajkumar, S, **Wilson, A**, Tryner, J, Africano, S, Osorio, AB, Clark, ML, "Kitchen concentrations of fine particulate matter and particle number concentration in households using biomass cookstoves in rural Honduras". *Environmental Pollution* 258 (Mar. 2020), p. 113697. doi: 10.1016/j.envpol.2019.113697.
- [47] Benka-Coker, W, \*Hoskovec, L, Severson, R, Balmes, J, **Wilson, A**, Magzamen, S, "The joint effect of ambient air pollution and agricultural pesticide exposures on lung function among children with asthma". *Environmental Research* 190.June (Nov. 2020), p. 109903. doi: 10 . 1016/j.envres.2020.109903.
- [48] Burkhardt, J, Bayham, J, **Wilson, A**, Berman, JD, O'Dell, K, Ford, B, Fischer, EV, Pierce, JR, "The relationship between monthly air pollution and violent crime across the United States". *Journal of Environmental Economics and Policy* 9.2 (Apr. 2020), pp. 188–205. doi: 10.1080/21606544.2019.1630014.
- [49] Fedak, KM, Good, N, Walker, ES, Balmes, J, Brook, RD, Clark, ML, Cole-Hunter, T, Devlin, R, L'Orange, C, Luckasen, G, Mehaffy, J, Shelton, R, **Wilson, A**, Volckens, J, Peel, JL, "Acute changes in lung function following controlled exposure to cookstove air pollution in the subclinical tests of volunteers exposed to smoke (STOVES) study". *Inhalation Toxicology* 32.3 (Feb. 2020), pp. 115–123. doi: 10.1080/08958378.2020.1751750.

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- [51] Lee, AG, Cowell, W, Kannan, S, Ganguri, HB, Nentin, F, **Wilson, A**, Coull, BA, Wright, RO, Baccarelli, A, Bollati, V, Wright, RJ, "Prenatal particulate air pollution and newborn telomere length: Effect modification by maternal antioxidant intakes and infant sex". *Environmental Research* 187.November 2019 (Aug. 2020), p. 109707. doi: 10.1016/j.envres.2020.109707.
- [52] Martenies, SE, Schaeffer, J, Erlandson, G, Bradford, M, Poole, JA, **Wilson, A**, Weller, Z, Reynolds, S, Magzamen, S, "Associations Between Bioaerosol Exposures and Lung Function Changes Among Dairy Workers in Colorado". *Journal of Occupational & Environmental Medicine* 26 (6 Mar. 2020), pp. 424–430. doi: 10.1097/JOM.0000000000001856.
- [53] Tryner, J, L'Orange, C, Mehaffy, J, Miller-Lionberg, D, Hofstetter, JC, **Wilson, A**, Volckens, J, "Laboratory evaluation of low-cost PurpleAir PM monitors and in-field correction using co-located portable filter samplers". *Atmospheric Environment* 220 (Jan. 2020), p. 117067. doi: 10.1016/j.atmosenv.2019.117067.
- [54] Walker, ES, Fedak, KM, Good, N, Balmes, J, Brook, RD, Clark, ML, Cole-Hunter, T, Dinenno, F, Devlin, RB, L'Orange, C, Luckasen, G, Mehaffy, J, Shelton, R, **Wilson, A**, Volckens, J, Peel, JL, "Acute differences in pulse wave velocity, augmentation index, and central pulse pressure following controlled exposures to cookstove air pollution in the Subclinical Tests of Volunteers Exposed to Smoke (SToVES) study". *Environmental Research* 180 (Jan. 2020), p. 108831. doi: 10.1016/j.envres.2019.108831.
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★ International Society of Environmental Epidemiology, Best Environmental Epidemiology Paper (BEEP) Award, 2020.
- [59] Bilsook, KR, Dahlke, J, Fedak, KM, Good, N, Hecobian, A, Herckes, P, L'Orange, C, Mehaffy, J, Sullivan, A, Tryner, J, Van Zyl, L, Walker, ES, Zhou, Y, Pierce, JR, **Wilson, A**, Peel, JL, Volckens, J, "A Laboratory Assessment of 120 Air Pollutant Emissions from Biomass and Fossil Fuel Cookstoves". *Environmental Science & Technology* 53.12 (June 2019), pp. 7114–7125. doi: 10.1021/acs.est.8b07019.

- [60] Bose, S, Ross, KR, Rosa, MJ, Chiu, YHM, Just, A, Kloog, I, **Wilson, A**, Thompson, J, Svensson, K, Rojo, MMT, Schnaas, L, Osorio-Valencia, E, Oken, E, Wright, RO, Wright, RJ, "Prenatal particulate air pollution exposure and sleep disruption in preschoolers: Windows of susceptibility". *Environment International* 124 (Mar. 2019), pp. 329–335. doi: 10.1016/j.envint.2019.01.012.
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 ★ Health Effects Institute student/postdoc travel award winner, 2018.
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### *Book Chapters*

- [1] Dominici, A, **Wilson, A**, "Dynamics of Environmental Epidemiology". *Handbook of Environmental and Ecological Statistics*. Ed. by AE Gelfand, M Fuentes, JA Hoeting, and RL Smith. Boca Raton, FL: Chapman & Hall/CRC, 2018. Chap. 24.

### *R Packages on CRAN*

- [1] \*Mork, D, \*Im, S, **Wilson, A**, *dlmTree: Bayesian Treed Distributed Lag Models*. R package version 1.1.0. 2025.
- [2] \*Demateis, D, Keller, K, **Wilson, A**, *dlm: Distributed Lag Interaction Model*. R package version 0.1.0. 2024.
- [3] **Wilson, A**. *bdlm: Bayesian Distributed Lag Interaction Models*. R package version 0.4.1. 2024.

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### **Funding**

#### *Current Funding*

ECHO OIF, NIH (subaward from Duke University) (PI: Hoskovec)	6/1/2025 - 5/31/2027
Identifying Windows of Susceptibility to Wildfire Smoke Exposure: Growth Trajectories and Mitigation	
Role: co-I and mentor	
*This is a career development award for a early stage investigator	
–, NSF ASCEND Engine in Colorado and Wyoming	6/01/2025 - 2/29/2026
RADSENSE: Rapid Analytics and Deployment of Sensor Networks for Emergencies (PI: Volkens)	
Role: co-PI	
R01ES036559, NIH/NIEHS (MPI: Farzan, Habre)	6/23/2025-4/30/2030
Wildfire smoke, heat and cardiovascular risk across the life course	
Role: co-I and CSU subaward PI	
R01ES036185, NIH/NIEHS (MPI: Farzan, Habre)	1/23/2025-11/30/2029
Children's Cardiovascular Health in a Changing Climate: The Impacts of Extreme Heat and	

Wildfire Smoke

Role: co-I and CSU subaward PI

R01ES035735, NIH/NIEHS (PI: Wilson) 7/6/2024-4/30/2029

Statistical Methods for Precision Environmental Health with Mixture Exposures

Role: PI

–, City of Greeley (PI: Wilson) 9/15/2023 - 12/31/2025

Predictive Modeling of Lead Pipes

Role: PI

R44ES024041, NIH/NIEHS (PI: Miller-Lionberg) 9/21/2021 - 8/31/2024

Validation of the UPAS+: A filter-based air sampler coupled with a suite of real-time sensors

Role: co-I

R01ES033190, NIH/NIEHS (PI: Ananth) 9/10/2021 - 6/30/2026

Ambient Air Pollution, Weather, and Placental Abruptio (APWA)

Role: co-I and CSU subaward PI

R01ES029943, NIH/NIEHS (MPI: Kioumourtzoglou, Weisskopf) 8/6/2020 - 5/31/2026

Air Pollution and Pregnancy Loss

Role: co-I and CSU subaward PI

*Completed Funding*

R01OH011660, NIH/NIEHS (MPI: Volckens, Carter) 8/1/2019 - 7/31/2023

A Citizen-Science Approach to Occupational Hazard Assessment

Role: co-I

–, CSU Graduate School (MPI: Wilson, Ivans) 12/1/2022 - 6/30/2023

Graduate School Mentoring Mini-Grant

–, AJ Kauvar Pundation (MPI: Magzamen, Wilson) 8/1/2020 - 7/31/2022

Examining Prevention Locally Through Research on Environmental Factors for COVID-19

Role: MPI

R01ES028811, NIH/NIEHS (MPI: Gennings, Coull) 5/15/2018 - 4/30/2022

Methods for data integration and risk assessment for environmental mixtures

Role: co-I and CSU subaward PI

R839278, US EPA (MPI: Magzamen) 1/1/2018 - 1/31/2020

Southeast Wisconsin Interdisciplinary Study of Children's Health, Ecological Exposures and Social Environment

Role: co-PI

80NSSC20K1774, NASA (MPI: Ravishankara) 7/1/2020 - 6/30/2021

Are there connections between PM2.5 and COVID-19 outcomes?

Role: co-I

R01ES023688, NIH/NIEHS (MPI: Peel, Volckens) 08/15/2014 - 05/31/2019

Cookstove air pollution: Emission profiles and subclinical effects of exposure

Role: added as collaborator mid-grant

R01ES020017, NIH/NIEHS (MPI: Volckens, Peel, Stuart) 01/15/2012 - 10/31/2017

The Commuter Exposure Study: Linking Exposures, Source-Receptor Models, And Health

Role: added as collaborator mid-grant

–, HICAHS pilot grant (MPI: L'Orange) 11/1/2016 - 10/31/2017  
 A Novel, Low-Cost Method for Assessing Personal Aerosol Exposures in Real-Time  
 Role: collaborator

## Presentations

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### *Invited*

Joint Statistical Meetings (JSM), Nashville, TN	2025
Biometrics Society Spring Meeting (WNAR), Whistler, British Columbia, Canada	2025
New England Statistics Symposium (NESS), New Haven, CT	2025
Joint Statistical Meetings (JSM), Portland, OR	2024
Society for Epidemiologic Research (SER), Austin, TX	2024
Biometrics Society Spring Meeting (WNAR), Fort Collins, CO	2024
Biometrics Society Spring Meeting (ENAR), Baltimore, MD	2024
National Institute of Environmental Health Sciences (NIEHS) DERT retreat on Precision Environmental Health, Research Triangle Park, NC	2024
Computational and Methodological Statistics (CMStatistics), Berlin, Germany	2023
EnviBayes Workshop on Complex Environmental Data, Fort Collins, CO	2023
Biometrics Society Spring Meeting (ENAR), Nashville, TN	2023
Eunice Kennedy Shriver National Institute of Child Health and Human Development, Biostatistics and Bioinformatics Branch (Virtual)	2023
The University of Texas at Dallas, Department of Mathematical Sciences (Virtual)	2022
Biometrics Society Spring Meeting (ENAR), Houston, TX	2022
Columbia Mailman School of Public Health, Department of Biostatistics (Virtual)	2022
Computational and Methodological Statistics (CMStatistics), London, UK (Virtual)	2021
University of Southern California, Division of Biostatistics (Virtual)	2021
International Society of Environmental Epidemiology (ISEE) (Virtual)	2021
International Chinese Statistical Association (ICSA) Intl. Conf., Hangzhou, China	2019
Harvard T. H. Chan School of Public Health, Dept. of Biostatistics, Boston, MA	2019
International Society of Environmental Epidemiology (ISEE), Ottawa, Canada	2018
Virginia Tech University, Dept. of Statistics, Blacksburg, VA	2018
International Conference on Health Policy Statistics, Charleston, SC	2018
Tianjin Medical University, Dept. of Occ. & Envr. Health, Tianjin, China	2017
Intl. Symp. on Emerging Contaminants and Envr. Nanotechnology, Tianjin, China	2017
Colorado State University, Epidemiology, Fort Collins, CO	2016
NC State University, Dept. of Statistics 75 <sup>th</sup> Anniversary Symposium, Raleigh, NC	2016
Harvard T. H. Chan School of Public Health, Dept. of Biostatistics, Boston, MA	2016
New England Statistics Symposium (NESS), New Haven, CT	2016
Colorado State University, Dept. of Statistics, Fort Collins, CO	2016
VI-MSS Workshop on Environmental Statistics, Kolkata, India, <i>Poster</i>	2015
Public Health Foundation of India, New Delhi, India	2015
Biometrics Society Spring Meeting (ENAR), Baltimore, MD	2014
RAND Corporation, Santa Monica, CA	2014
National Center for Atmospheric Research, Boulder, CO	2014
University of Colorado, Dept. of Mathematical and Statistical Sciences, Denver, CO	2014
Harvard School of Public Health, Dept. of Biostatistics, Boston, MA	2014
University of North Carolina, Institute for the Environment, Chapel Hill, NC	2014

Colorado State University, Dept. of Statistics, Fort Collins, CO	2013
Atmospheric Modeling Division, U.S. Environmental Protection Agency, RTP, NC	2013

## Teaching

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### *Colorado State University*

STAT 192: First-Year Statistics Seminar	F24
STAT 341: Statistical Data Analysis I	F25
STAT 440: Bayesian Data Analysis	S17, S18, S19, S20, S21, S22, S23, S25
STAT 501: Statistical Science	F18, F19
STAT 540: Data Analysis and Regression	F16, F17, F19
STAA 554: Data Visualization Methods	S22, F22
STAA 566: Mixed Models	S19
STAA 562: Mathematical Statistics with Applications	F24, F25
STAA 578: Machine Learning	S20, S21, S22, S23

### *Workshops and Short Courses*

<i>Invited Workshop on Critical Windows and Distributed Lag Regression</i>	February 2019
Icahn School of Medicine at Mount Sinai, New York, NY. Full-day workshop.	
Joint with Brent A Coull, Chris Gennings, and Robert O Wright.	
<i>Environmental Mixtures Workshop</i>	July 2022, 2023, 2024, 2025
Columbia Mailman School of Public Health, New York, NY. Two-day workshop.	
Joint with Marianthi-Anna Kioumourtzoglou (organizer), Brent A Coull, Chris Gennings, Jeff Goldsmith.	

## Advising & Mentoring

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### *Graduate Research Advising & Research Mentoring*

Tristan Contant, Statistics PhD, in progress (Joint with Yawen Guan)	
Wentao Guo, Statistics PhD, in progress	
Chamodi Matara Arachchige, Statistics MS, Research Assistant in Summer 2023	
Brody Elderson, Statistics PhD, in progress (Joint with Matt Koslovsky)	
Mosammat Sonia Khatun, Statistics PhD, in progress	
Danielle Demateis, Statistics PhD, 2025 (Joint with Kayleigh Keller)	
– Honorable Mention: NSF Graduate Research Fellowship Program (GRFP), 2022	
– Next position: Postdoctoral Fellow with NIH/NIEHS	
Seongwon Im, Statistics PhD, 2024	
Sierra Pugh, Statistics PhD, 2023 (Joint with Bailey Fosdick)	
– Next position: Western EcoSystems Technology, Inc. (WEST)	
Lauren (Heck) Hoskovec, Statistics PhD, 2022	
– Next position: Western EcoSystems Technology, Inc. (WEST)	
– Winner: Health Effects Institute (HEI) Travel Award, 2019	
– Winner: CSU Statistics, Elmer E. Remmenga Scholarship In Applied Statistics, 2018 and 2019	
– Honorable Mention: 2021 JSM ENVR Section Student Paper Awards.	
– Global Sustainability Fellow, School of Global Environmental Sustainability, CSU, 2020-2021	

Daniel Mork, Statistics PhD, 2021

- Next position: Postdoctoral Fellow at Harvard Biostatistics
- Winner: James R. zumBrunnen Statistical Collaboration Award, 2020
- Winner: CSU Statistics, Boes Excellence in Teaching Award, 2019
- Winner: College of Natural Sciences Outstanding Scholar Award, 2020
- Winner: Health Effects Institute (HEI) Jane Warren Trainee Conference Award, 2021

Emily Williams, Statistics MS 2020 (joint with Zach Weller)

#### *Undergraduate Research Mentoring*

Olivia Beck, Statistics, BS 2020 (honors thesis advisor)

- Thesis title: *College safe ride programs: Bayesian analysis of ridership with safe ride home versus anywhere policies*
- Winner: Outstanding poster distinction for undergraduate posters at Joint Math Meetings, 2020
- Winner: CSU Statistic and Colorado-Wyoming Chapter of the ASA, Maurice Davies Award, 2020
- Next position: Statistics PhD student at Pennsylvania State University

Freya (Ziqian) Fu, Statistics & Psychology, BS 2017.

- Next position: Statistics MS student at Duke University.

#### *PhD Committee Member - Colorado State University*

Trevor Overton, Mathematics, in progress

John Henry Gray, Statistics, in progress

Chamodi Matara Arachchige, Statistics, in progress

Bowen Li, Electrical Engineering, in progress

Musfiq Nabeen, Statistics, in progress

Kevin Korsurat, Statistics, in progress

Emilio Molina Rueda, Mechanical Engineering, PhD 2025

Maddie Rainey, Statistics, PhD 2025

Tony J. Zbysinski III, Epidemiology, PhD 2025

Nathan Ryder, Statistics, PhD 2023

Ethan Walker, Epidemiology, PhD 2019

Wande Benka-Coker, Epidemiology, PhD 2019

Miranda Fix, Statistics, PhD 2018

Meilin Yan, Epidemiology, PhD 2018

Kristen Fedak, Epidemiology, PhD 2018

Megan Benka-Coker, Epidemiology, PhD 2018

#### *PhD Committee Member - Other Institutions*

Sebastian Rowland, Environmental Health Science, Columbia University, PhD 2022

#### *MS Committee Member - Colorado State University*

Hieu Nguyen, Statistics, MS 2019

#### *Undergraduate Honors Thesis Committee Member - Colorado State University*

Ashley Geraets, Mechanical Engineering, BS 2023

### *Career Development Award Mentoring*

Lauren Hoskovec, Research Scientist at Colorado State University

*Identifying Windows of Susceptibility to Wildfire Smoke Exposure: Growth Trajectories and Mitigation.* NIH/Environmental influences on Child Health Outcomes (ECHO) Opportunities and Innovation Fund (OIF).

Daniel Mork, Research Scientist at Harvard T.H. Chan School of Public Health

*ECHO-wide Precision Environmental Health Analyses of Air Pollution Exposure and Birth Outcomes.* NIH/Environmental influences on Child Health Outcomes (ECHO) Opportunities and Innovation Fund (OIF).

### *Working Group Organization*

Creator and organizer of the Environmental Biostatistics Working Group at CSU. This group seeks to build collaboration and community among faculty and students working in biostatistics with application in environmental and public health.

### **Inclusive Excellence Activities**

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#### *Trainings and qualifications*

Member of Graduate Center for Inclusive Excellence (GCIM) 2024-

Completed GCIM GCIM Mentor Well Series of 8 training sessions between spring 2023 and summer 2024.

Completed Faculty Institute for Inclusive Excellence Spring 2024

## Service & Professional Membership

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### *Departmental Service, Department of Statistics, Colorado State University*

AY16-17	Member, Doctoral Candidacy Examination Committee	Appointed
AY17-18	Member, Doctoral Candidacy Examination Committee	Appointed
AY17-18	Chair, Statistics Seminar Series	Appointed
AY17-18	Member, Assistant Professor (Tenure-Track) Search Committee	Appointed
AY17-18	Chair, Computing Committee	Appointed
AY18-19	Chair, Computing Committee	Appointed
AY18-19	Member, Graduate Admission Committee	Appointed
AY18-19	Member, Assistant Professor (Tenure-Track) Search Committee	Appointed
AY19-20	Chair, Computing Committee	Appointed
AY19-20	Member, Doctoral Candidacy Examination Committee	Appointed
AY19-20	Member, Assistant Professor (Tenure-Track) Search Committee	Appointed
AY20-21	Chair, Computing Committee	Appointed
AY20-21	Member, Masters of Applied Statistics (MAS) Committee	Appointed
AY20-21	Member, Communication Committee	Appointed
AY21-22	Chair, Computing Committee	Appointed
F22	Member, Graduate Program Committee	Appointed
AY22-23	Member, Associate Professor (Tenure-Track) Search Committee	Appointed
AY22-23	Chair, Graduate Admission Committee	Appointed
AY24-25	Member, Department Chair Search Committee	Appointed
AY24-25	Chair, Teaching Assistant Professor (Adjunct) Search Committee	Appointed
AY24-25	Chair, Communication Committee	Appointed
AY24-25	Member, Graduate Program Committee	Appointed
AY24-25	Member, Promotion and Tenure Advisory Committee	Elected
AY25-26	Member, Graduate Program Committee	Appointed
AY25-26	Member, Promotion and Tenure Advisory Committee	Elected

### *College and University Service, Colorado State University*

AY22-25	Member, Faculty Council	Elected
AY25-26	Member, College of Natural Sciences Dean Search Committee	Appointed

### *Editorial Service*

Editorial Review Board, <i>Environmental Health Perspectives</i>	2023-2025
Associate Editor, <i>Biometrics</i>	2022-Present
Associate Editor, <i>Journal of Agricultural, Biological, and Environmental Statistics (JABES)</i>	2020-Present
Referee/Reviewer for a lot of journals a lot of times	2013-Present

### *Grant Reviewer*

High Plains Intermountain Center for Agricultural Health and Safety (HICAHS) Pilot Grants: 2016, 2017, 2018	
Icahn School of Medicine at Mount Sinai NIEHS P30 Pilot Grant: 2019	
Walter A. Rosenblith New Investigator Award, Health Effects Institute: 2020, 2021 ( $\times 2$ )	
US EPA Science To Achieve Results (STAR) Research Program: 2022, 2024	
NIH Analytics and Statistics for Population Research Panel B (ASPB): 2025	

*Conference Organization*

IMS New Researchers Conference (NRC), co-organizer, Fort Collins, CO 2019

*Conference Session Organization*

*Innovative Methods for Identifying Perinatal Critical Windows with Mixtures* 2021

International Society for Environmental Epidemiology (ISEE) Symposium

*Methods for multivariate response data with complex exposure-response relations* 2025

JSM Topic-Contributed Session

*Professional Society Service*

Publications Chair, ASA Section on Statistics and the Environment 2025-2026

Invited Panelist, National Institute of Statistical Sciences (NISS) Writing Workshop for 2025  
Junior Researchers (Grant Writing)

*Professional Society Membership*

Member: ASA, ENAR (2012-2024), WNAR (2024-present), ISEE

Last updated: November 9, 2025