# Matthew Bozigar, PhD, MA

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## A. PERSONAL STATEMENT

I am an assistant professor in the College of Health at Oregon State University, USA. I have a multidisciplinary background in civil engineering, geography, epidemiology, and environmental health, and enthusiastically collaborate on interdisciplinary teams to address the multidimensional challenges facing public health. My research investigates the modifiable social and environmental drivers of health disparities, as well as the health effects of transportation noise, radon decay, and airborne particulates.

## B. EDUCATION & EMPLOYMENT

### Education

PhD, Epidemiology, 2020
*Medical University of South Carolina (MUSC), Charleston, SC*

MA, Geography, 2014
*University of North Carolina (UNC), Chapel Hill, NC*

BS, Civil Engineering, 2006
*California Polytechnic State University (Cal Poly), San Luis Obispo, CA*

### Professional experience

Postdoctoral Associate, Department of Environmental Health, 2020-2022
*Boston University School of Public Health (BUSPH), Boston, MA*

GIS Analyst, 2015
*Tidewater Environmental Services, Charleston, SC*

Hydraulic Engineer-In-Training (E.I.T. #123429), 2011-2012
*MA Engineering Consultants, Cary, NC*

Civil Engineer-In-Training (E.I.T. #123429), 2004-2009
*CH2M HILL (now Jacobs), Portland, OR*

## C. SCHOLARSHIP

### Peer-reviewed publications

**Bozigar M**, Laden F, Hart JE, Redline S, Huang T, Whitsel EA, Nelson EJ, Grady ST, Levy JI, Peters JL (under review 2023). Aircraft noise exposure and body mass index among female participants in two Nurses' Health Study prospective cohorts living around 90 airports in the United States.

Jimenez RB, **Bozigar M**, Janulewicz P, Lane KJ, Hutyra LR, Fabian MP (2023). School greenness and student-level academic performance: Evidence from the Global South. *Geohealth*, 7(8), e2023GH000830.

Grady ST, Hart JE, Laden F, Roscoe C, Nguyen DD, Nelson EJ, **Bozigar M**, VoPham T, Manson JE, Weuve J, Adar SD, Forman JP, Rexrode K, Levy JI, Peters JL (2023). Associations between long-term aircraft noise exposure, cardiovascular disease, and mortality in US cohorts of female nurses. *Environmental Epidemiology, 7*(4), e259.

**Bozigar M**, Huang T, Redline S, Hart JE, Grady ST, Nguyen DD, James P, Nicholas B, Levy JI, Laden F, Peters JL (2023). Associations between aircraft noise exposure and self-reported sleep duration and quality in the United States-based prospective Nurses' Health Study cohort. *Environmental Health Perspectives, 131*(4), 47010.

**Bozigar M**, Connolly CL, Legler A, Adams WG, Milando CW, Reynolds DB, Carnes F, Jimenez RB, Peer K, Vermeer K, Levy JI, Fabian MP (2022). In-home environmental exposures predicted from geospatial characteristics of the built environment and electronic health records of children with asthma visiting a safety net hospital. *Annals of Epidemiology*, 73, 38-47.

Simon M, Hart JE, Levy JI, VoPham T, Malwitz A, Nguyen DD, **Bozigar M**, Cupples A, James P, Laden F, Peters J (2022*).* Sociodemographic patterns of exposure to civil aircraft noise in the United States. *Environmental Health Perspectives, 130*(2), 1-10.

**Bozigar M**, Lawson A, Pearce J, Svendsen E, Vena J (2021). Using Bayesian time-stratified case-crossover models to examine associations between air pollution and "asthma seasons" in a low air pollution environment. *PLOS ONE, 16*(12)*.*

**Bozigar M**, Lawson A, Pearce J, King K, Svendsen E (2020). A Bayesian Spatio-Temporal Analysis of Neighborhood Pediatric Asthma Emergency Department Visit Disparities. *Health and Place*, *66*(April), 102426.

**Bozigar M**, Faith T, White A, Drayton K, Fabick A, Cartmell K (2020). A cross-sectional survey to evaluate potential for partnering with school nurses to promote HPV vaccination. *Preventing Chronic Disease*, *17*(E111), 1-10.

**Bozigar M**, Lawson A, Pearce J, Cristaldi K, Svendsen E (2020). A geographic identifier assignment algorithm with Bayesian variable selection to identify neighborhood factors associated with emergency department visit disparities for asthma. *International Journal of Health Geographics, 19*(1), 1-16.

Pearce J, Neelon B, **Bozigar M**, Hunt K, Commodore A, Vena J (2018). Associations between multipollutant day types and select cardiorespiratory outcomes in Columbia, South Carolina, 2002 to 2013. *Environmental Epidemiology*, *2*(4), e030.

Pearce J, Commodore A, Neelon B, Boaz R, **Bozigar M**, Wilson S, Svendsen E (2017). A novel approach for characterizing neighborhood-level trends in particulate matter using concentration and size fraction distributions: a case study in Charleston, SC. *Air Quality, Atmosphere, & Health*; *10*(10), 1181–1192.

**Bozigar M**, Gray CL, Bilsborrow RE (2016). Oil extraction and indigenous livelihoods in the Northern Ecuadorian Amazon. *World Development*, 78, 125–135.

Gray CL, **Bozigar M**, Bilsborrow RE (2015). Declining use of wild resources by indigenous peoples of the Ecuadorian Amazon. *Biological Conservation*, 182, 270–277.

**Invited seminars**

**Bozigar M**. "Associations between aircraft noise, sleep, and adiposity in the Nurses' Health Study cohorts". Seminar series College of Public Health & Human Sciences (CPHHS), Oregon State University (OSU); 2022 Nov 4; Corvallis, OR.

**Bozigar M**, Connolly C, Adams W, Fabian MP. "Novel approaches using geospatial data and electronic health records in exposure assessment, epidemiology, and clinical care." Centers for Disease Control and Prevention: National Center for Environmental Health, Division of Environmental Health Science and Practice, and Environmental Epidemiology Working Group joint bi-monthly meeting and webinar; 2021 Nov 12 (virtual).

**Bozigar M**, Cristaldi KK, Pearce JL, Svendsen E. "Pediatric asthma emergency department visits in South Carolina." Seminar series for fellows in pulmonary medicine; 2019 Oct 25 and 2018 Feb 16; MUSC, Charleston, SC.

**Oral presentations**

**Bozigar M**, Konstantinoudis G, Vieira CLZ, Li L, Jones RR, Koutrakis P. "Domestic radon exposure and childhood cancer risk in 722 counties in the United States, 2000 to 2018." Annual Cascadia Symposium on Environmental, Occupational, and Population Health; 2024 Jan 11; Blaine, WA.

**Bozigar M**, Haggerty B, Mowrer C, Larkin A, Peters J, Hystad P. "A Cascadia collaboration: Simultaneously addressing community concerns and scientific research gaps in transportation noise exposures in Portland, Oregon." Annual Cascadia Symposium on Environmental, Occupational, and Population Health; 2024 Jan 11; Blaine, WA.

**Bozigar M**, Connolly C, Vermeer K, Carvalho L, Cohen R, Dugas J, Levy JI, Fabian MP. "Housing, in-home environmental exposures, and lung function in children with asthma visiting a safety net hospital." Annual Cascadia Symposium on Environmental, Occupational, and Population Health; 2023 Jan 6; Blaine, WA.

**Bozigar M**. "Radon and non-lung cancer outcomes". OSU Ignite session, 2022 Oct 28; Corvallis, OR.

**Bozigar M**, Laden F, Hart JE, Redline S, Huang T, Nelson EJ, Grady ST, Levy JI, Peters JL. "Associations between aircraft noise exposure and adiposity in the U.S.-based prospective Nurses' Health Studies." Annual meeting of the International Society for Environmental Epidemiology (ISEE); 2022 Sep 19; Athens, Greece.

**Bozigar M**, Huang T, Redline S, Hart JE, Grady ST, Nguyen DD, James P, Levy JI, Laden F, Peters JL. "Associations between aircraft noise exposure and self-reported sleep in the United States-based prospective Nurses' Health Study cohort." Gijs Van Seventer Seminar Series of BUSPH Department of Environmental Health; 2022 Mar 4; Boston, MA (virtual).

**Bozigar M**, Connolly C, Adams W, Fabian MP. "Predicting residential exposure to allergens in an electronic health record cohort of children with asthma in Massachusetts, USA." Annual meeting of ISEE; 2021 Aug 26; New York, NY (virtual).

**Bozigar M**, Lawson A, Pearce JL, Cristaldi KK, Svendsen E. "A Bayesian spatio-temporal analysis of neighborhood pediatric asthma emergency department visit disparities". Gijs Van Seventer Seminar Series of BUSPH Department of Environmental Health; 2021 Dec 14; Boston, MA (virtual).

**Bozigar M**, Lawson A, Pearce JL, Cristaldi KK, Svendsen E. "Neighborhood socioenvironmental factors associated with asthma emergency department visit disparities using a space-time model: A case study in South Carolina 1999-2015." Annual meeting for the Society for Pediatric and Perinatal Epidemiologic Research; 2019 Jun 17; Minneapolis, MN.

**Bozigar M**, Lawson A, Svendsen E, Pearce JL, Cristaldi KK, Vena J. "Methodological considerations in constructing a space-time model of disease risk: An applied case study of asthma in South Carolina 1999-2015." BIOSTAT 2019, the 24th International Scientific Symposium on Biometrics of the Croatian Biometric Society; 2019 Jun 7; Zagreb, Croatia.

**Bozigar M**, Lawson A, Svendsen E, Pearce JL. "Exploring socioenvironmental determinants of pediatric asthma disparities in South Carolina." Joint annual meeting of ISEE and the International Society of Exposure Science; 2018 Aug 30; Ottawa, ON, Canada.

**Bozigar M**, Cristaldi KK, Pearce JL, "Exploring the geography of pediatric asthma using emergency department visits in South Carolina." Perry V. Halushka MUSC Student Research Day; 2017 Nov 3; MUSC, Charleston, SC.

**Bozigar M**, Pearce JL, Svendsen E. "Geographic variation in pediatric emergency department visits for asthma in South Carolina from 1999-2015." Perry V. Halushka Research Day 2016; 2016 Nov 4, MUSC, Charleston, SC.

**Bozigar M**, Gray CL, Bilsborrow RE. "Oil extraction and indigenous livelihoods in the Northern Ecuadorian Amazon: A longitudinal and multi-level analysis." Association of American Geographers (AAG) Annual Meeting; 2014 April 8, Tampa Bay, FL.

## Poster presentations

**Bozigar M**, Cohen RT, Connolly CL, Adams WG, Levy JI, Fabian MP. "Decoupling race/ethnicity from pediatric lung function metrics to investigate potential misclassification bias in environmental epidemiologic research." Annual meeting of ISEE; 2022 Sep 18; Athens, Greece.

**Bozigar M**, Huang T, Redline S, Hart JE, Grady ST, Nguyen DD, Levy JI, Laden F, Peters JF. "Associations between aircraft noise exposure and insufficient sleep in the US-based prospective Nurses' Health Study cohort." Annual meeting of ISEE; 2021 Aug 23; New York, NY (virtual).

**Bozigar M**, Lawson AB, Pearce JL, Svendsen ER, Vena J. "Using Bayesian time-stratified case-crossover models to examine associations between air pollution and "asthma seasons" in a low air pollution environment." Annual meeting of ISEE; 2021 Aug 23; New York, NY (virtual).

**Bozigar M**, Lawson A, Pearce JL, Cristaldi KK, Svendsen ER. "Methodological considerations in constructing a space-time model of disease risk: An applied case study of asthma in South Carolina 1999-2015." GEOMED 2019, the 11th international, interdisciplinary conference on spatial statistics, geographical epidemiology and geographical aspects of public health; 2019 Aug 28; Glasgow, Scotland.

**Bozigar M**, Lawson A, Pearce JL, Cristaldi KK, Svendsen E. "Neighborhood socioenvironmental factors associated with asthma emergency department visit disparities using a space-time model: A case study in South Carolina 1999-2015." Annual meeting for the Society for Epidemiologic Research; 2019 Jun 19; Minneapolis, MN.

**Bozigar M**, Gray CL, Bilsborrow RE. "Longitudinal and multi-ethnic changes in wild resource utilization in the Ecuadorian Amazon." South Eastern Division of the Association of American Geographers Annual Meeting; 2012 November 19, Asheville, NC.

## Current awards & support

Oregon State University Environmental Health Sciences Center Early Stage Investigator (2024).

Funding Award (PI): Traffic noise measurement sampling project for Multnomah County using state-of-the-art low-cost measurement device ($100,000), *Multnomah County, 2023*

Pilot Project Program Award (PI): Elucidate the spatio-temporal patterns of indoor air within and across homes, in addition to correlations with housing characteristics ($24,420) – *Pacific Northwest Center for Translational Environmental Health Research,* 2022

Loan Repayment Program Award L40HL165560 (PI, ≤$50,000/yr) – *National Heart, Lung, and Blood Institute (NHLBI)*, 2022-2024

## Grant applications

P20 (Co-I): Climate Change and Health Adaption Research Center – *National Institute of Environmental Health Sciences (NIEHS),* 2023

KL2 (PI): Integrating Electronic Health Records and Environmental Data to Better Understand and Treat Asthma  (Principal Investigator) – *Oregon Clinical & Translational Research Institute*, 2023

## Previous grants & support

F31 Predoctoral Research Service Award F31HL142124 (PI, $42,000/year) – *National Heart, Lung, and Blood Institute (NHLBI)*, 2018-2020

Dissertation Workshop Participant, fully-funded ($1,000) – *Annual meeting of the Society of Epidemiologic Research, Seattle, WA*, 2017

Tinker Research Travel Grant, 3 weeks in indigenous Amazonian communities in Ecuador ($1,800) – *UNC Institute for the Study of the Americas*, 2013

Reward and Recognition, Monetary Reward and Recognition ($1,500) – *CH2M HILL (now Jacobs),* 2008

## Awards & honors

New Researcher Abstract Award, Best from North America, Student and New Research Network (free 1-year society membership) – *Annual Meeting of the International Society for Environmental Epidemiology (ISEE), New York, New York (virtual)*, 2021

Student Abstract Award, Best from North America, Student and New Research Network ($500) – *Annual Meeting of ISEE, Utrecht, The Netherlands*, 2019

Departmental Nomination to Apply for National Institutes of Health Director's Early Independence Award (DP5) from MUSC – *MUSC DPHS*, 2019

Dr. Raymond S. Greenberg Presidential Scholars Program Scholar – MUSC, 2018-2019

**Media coverage**
- o Article: "Associations between Aircraft Noise Exposure and Self-Reported Sleep Duration and Quality in the United States-Based Prospective Nurses' Health Study Cohort"
  - Mentioned by 49 news outlets, including U.S. News and World Reports, MSN, StudyFinds, and CNET
  - 99th percentile Altimetric Attention Score of 25+ million research outputs tracked by Altmetric, 98th percentile Altimetric Attention Score for outputs from Environmental Health Perspectives (Impact factor: 10.4)

## D. SERVICE

## Teaching – OSU

Peer reviews
- o Emily Norcross, 2023 Mar 6
- o Sunil Khanna, 2023 Feb 10

Courses
- o H651 Advanced Epidemiological Methods, *OSU*, Winter 2023
  - 75% course redesign and refresh
  - Instructor
- o H425 Foundations of Epidemiology (E-campus), *OSU*, Spring 2023
  - Instructor
- o H425 Foundations of Epidemiology (E-campus), *OSU*, Fall 2023
  - Instructor

Training
- o Faculty Drop-In Discussion: The Impact of Generative AI on Education, 2023 May 11
- o Mutual Mentors Program, *OSU*, Fall 2022

## Teaching – previous institutions

Courses
- o Geographic Information Systems for Public Health, *BUSPH*, Fall 2021
  - Guest lecture on spatial statistics
- o Principles of Environmental Health Science, *MUSC*, Spring 2018
  - Guest lecture on geospatial data in environmental health
- o Field Epidemiology, *MUSC*, Summer 2017
  - Guest lecture on communicable diseases and outbreaks
- o Principles of Environmental Health Science, *MUSC*, Spring 2017
  - Guest lecture on geospatial data in environmental health
- o Foundations of Epidemiology I, *MUSC*, Fall 2016
  - Lead small group discussions
- o Introduction to Geographic Information, *UNC*, Spring 2013
  - o Lead two laboratory sections
- o World and Regional Geography, *UNC*, Spring 2012
  - o Co-lead review session

## Professional & institutional

SPER student and trainee poster judge

ISEE NAC Scientific Organizing Committee, Chair of Sub-Committee on Session Themes and Abstract Assignments, *OSU*, 2022-2023

Student Advisory Committee Member – *MUSC DPHS*, 2018-2019

Senator from Geography Department – *UNC Graduate and Professional Student Federation (GPSF)*, 2013-2014

**College of Public Health and Human Sciences – OSU**

University Core Education: Scientific Inquiry and Analysis Workgroup – Member 2023

Virtual open house for prospective Master's in Public Health students – Co-represented epidemiology program, Fall 2022

**Committees**
Students
o Kianoush Vali (MS Civil Engineering)

**Research Assistants – OSU**
MPH students
o Carson Mowrer

**Student advising – OSU**

MPH students
o Emily Moore

**Student mentoring – previous institutions**

PhD students
o *Catherine Connolly*
o *Stephanie Grady, MPH*
o *Raquel Jimenez Celsi, MS*

**Peer reviews**

Journal
o Cancer Medicine
o Environmental Health Perspectives
o Environment International
o Urban Education

**Proposal reviews**

Organization
o Robert Wood Johnson Foundation
  • Evidence for Action

**Professional development**

New to NIH Workshop (Instructor: Dr. Matthew Johnston) – *OSU*, 2022

ABCs of Machine Learning (workshop, instructors Dr. Jeanette Stingone and Dr. Eric Lofgren) – *SER Annual Meeting (virtual), San Diego, CA*, 2020.

Social Epidemiology (short course, instructor: Dr. Manuel Franco) – *Summer Institute of Epidemiology and Biostatistics, Johns Hopkins University*, 2018

Data Wrangling with R (short course, instructors: Dr. Andrew Jaffe and Dr. Jeff Leek) – *Summer Institute in Statistics for Big Data, University of Washington*, 2018

Big Environmental Data (workshop, instructors: Dr. Youssef Oulhote, Dr. Laura Balzer, Dr. Chirag Patel, & Dr. Martin Tondel) – *ISEE Annual Meeting, Ottawa, Canada*, 2018

## Professional memberships

International Society for Exposure Science (ISES), 2020-current

International Society for Environmental Research (ISEE), 2018-current

Society for Epidemiologic Research (SER), 2017-current

Society for Pediatric and Perinatal Epidemiologic Research (SPER), 2019-current