

Tara P. McAlexander, PhD, MPH

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PROFESSIONAL EXPERIENCE

Drexel University Dornsife School of Public Health, Department of Epidemiology and Biostatistics

Philadelphia, PA, February 2021- present, *Assistant Research Professor*

September 2019- February 2021, *Post Doctoral Research Fellow*

May 2024 – present, *Faculty Affiliate at the Urban Health Collaborative*

- Conducted analyses of built environment exposures across multiple geographies and years with various health outcomes in the context of climate change.
- Assisted with the development and validation of data-derived metrics for measuring multiple variables of interest relevant to the built environment and chronic disease for several longitudinal and national population-based cohorts.
- Conducted epidemiologic analyses of environmental and population health outcomes such as diabetes incidence and prevalence in the REasons for Geographic and Racial Differences in Stroke (REGARDS) cohort and electronic health record (EHR) datasets from Geisinger and the US Department of Veterans Affairs.
- Evaluated optimal exposure assignment for particulate matter air pollution less than 2.5 microns in diameter (PM_{2.5}), ozone, and measures of green space for use in epidemiology studies.

The Fund for Public Health in New York/ New York City Department of Health and Mental Hygiene, Bureau of Environmental Surveillance and Policy

New York, NY, October 2013-August 2014, *Environmental Health Research Fellow*

- Integrated neighborhood-level air quality data from the New York City Community Air Survey (NYCCAS) with NYC hospital records in a NIH/NIEHS-funded pregnancy outcome study
- Calculated birth outcome indicators for the NYC Environmental Health Tracking Portal using the NYC Vital Records database
- Created exposure metrics and performed time-series analyses on the relationship between National Weather Service data and pregnancy outcomes using SAS and R

University of California, San Francisco School of Medicine, Department of Epidemiology and Biostatistics, Philip R. Lee Institute for Health Policy Studies

San Francisco, CA, June 2013-August 2014, *Consultant*

- Assisted with survey design, coordination of stakeholder engagement, and survey dissemination for a NSF-funded national study of emergency preparedness in the death care sector

Association of Schools and Programs of Public Health/U.S. Environmental Protection Agency

Research Triangle Park, NC, September 2012-August 2013, *ASPPH/EPA Environmental Health Fellow*

- Developed a built and natural environmental health vulnerability index for Durham-Chapel Hill, NC at the US EPA Office of Research and Development Sustainable and Healthy Communities Research Program
- Conceptualized and executed database management and statistical plans based on geospatial and secondary datasets using SAS, R, and ArcGIS

Columbia University Mailman School of Public Health, Department of Sociomedical Sciences

New York, NY, August 2010-May 2012, *Project Coordinator*

- Managed a research team of ten graduate research assistants, project budget and timelines, coordination with community partners and programs, data integrity and security, IRB human subject protection protocols, and grant reporting requirements for a HUD-funded study on environmental household hazards in a senior population of Washington Heights, New York City

Columbia University Mailman School of Public Health, Department of Sociomedical Sciences New York, NY, September 2007-January 2009; September 2009- July 2010, *Research Assistant*
University of Pennsylvania School of Medicine, Center of Excellence in Environmental Toxicology Philadelphia, PA, Summer 2009, *Penn Undergraduate Environmental Health Scholar*
American Cancer Society, Cherry Hill, NJ Summer 2007, *Intern*

EDUCATION

Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD
Doctor of Philosophy, Exposure Sciences and Environmental Epidemiology,
Department of Environmental Health and Engineering, September 2014-August 2019.

- Dissertation: *Unconventional natural gas development (UNGD), other environmental factors, and heart failure: Exploring epidemiological associations between UNGD and heart failure outcomes using electronic health records in Pennsylvania, 2008-2015*

Columbia University Mailman School of Public Health, New York, NY
Department of Environmental Health Sciences

Master of Public Health in Environmental and Molecular Epidemiology, May 2012

- Thesis: *Prevalence and distribution of household asthma hazards in an elderly population in Washington Heights, NYC*

Barnard College, Columbia University, New York, NY

Bachelor of Arts, May 2010

Major: Environmental Science

- Thesis: *Influence of urban street noise on neighborhood crime: A pilot field study*, passed with distinction

School for International Training, Brattleboro, VT

Study Abroad in Geneva, Switzerland: *Development Studies and Public Health*, Spring 2009

- Independent study project: *Health effects of pesticide use in Viet Nam*

HONORS AND AWARDS

Finalist, Lilianfeld Postdoctoral Prize Paper Award, Society for Epidemiologic Research, 2021

Journal of the American College of Cardiology, Editor-in-Chief's Top Picks from 2020: Cardiac Failure & Myocarditis, 2021

Johns Hopkins University Department of Environmental Health and Engineering Research Retreat, 1st place poster award for Exposure Sciences and Environmental Epidemiology, January 2018.

American Public Health Association Student Scholarship Recipient Sponsored by External Medical Affairs, Pfizer, Inc., 2011

American Public Health Association Environment Section's Student Poster Achievement Award, 1st place: Association between urban street noise and neighborhood crime: a pilot field study, 2010

American Public Health Association Environment Section's Student Travel Award, 2010

ABSTRACTS

Meeker MA, Schwartz BS, Bandeen-Roche K, Hirsch AG, DeSilva S, **McAlexander TP**, Black NC, McClure LA. (2021, October 24-27). Assessing measurement invariance of a land use environment construct across levels of urbanicity. APHA's 2021 Annual Meeting and Expo, Denver, CO, United States, 2021.

McAlexander TP, Jagai J, McClure LA. Environmental factors associated with changes in county-level diabetes prevalence in the United States, 2004-2017, 33rd Annual Conference of the International Society for Environmental Epidemiology (virtual), 2021.

McAlexander TP, Algur Y, Schwartz BS, Lee D, Siegel K, Johnson J, Lee NL, McClure LA. Categorizing community type for epidemiologic evaluation of food and physical activity resources in the United States. Society for Epidemiologic Research Virtual Conference, 2020.

McAlexander TP, Long DL, De Silva SA, Meeker MA, McClure LA. Comparison of PM_{2.5} exposure estimates in the REGARDS cohort: understanding differences by community type and exposure assignment choices. 32nd Annual Conference of the International Society for Environmental Epidemiology (virtual), 2020.

Malla G, Long DL, Cherrington A, Safford M, Cummings DM, **McAlexander TP**, De Silva S, Judd S, Hidalgo B, Levitan EB, Carson AP. 1492-P: Urbanicity and risk of coronary heart disease among adults with diabetes: the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. *Diabetes* Jun 2020, 69 (Supplement 1) 1492-P; DOI: 10.2337/db20-1492-P

McAlexander TP, Pollak J, Bandeen-Roche K, Schwartz BS. Association between unconventional natural gas development activity and hospitalization among heart failure patients in northeastern Pennsylvania. Society for Epidemiologic Research Annual Meeting; 2018, Baltimore, Maryland.

McAlexander TP, Neitzel R, Gershon RRM. Geographic and temporal variability in road/street noise levels in New York City. Conference of ISEE, ISES and ISIAQ Environmental Health Conference; 2013, Basel, Switzerland.

Bush KF, Jackson L, Sears A, **McAlexander TP**, Baynes J, Pilant A, Maxson P, Edwards SE, Miranda ML. Applying EnviroAtlas to Public Health: Investigating the association between green space and birth outcomes in Durham-Chapel Hill, NC. ESRI User Conference; 2013, San Diego, CA.

McAlexander TP, Bush KF, King K, Jackson L, Araujo R. The spatial and socio-economic distribution of healthy food options in Durham-Chapel Hill, NC. Fifth Annual Health Disparities Conference at Teachers College, Columbia University; 2013, New York, NY.

Bush KF, **McAlexander TP**, King K, Jackson L, Araujo R. Disparities in access: the spatial distribution of resources in Durham-Chapel Hill, NC. University of North Carolina Minority Health Conference; 2013, Chapel Hill, NC.

McAlexander TP, Perzanowski M, Hernández-Cordero LJ, Gershon RRM. Prevalence and distribution of environmental hazards associated with asthma in the households of elderly community members in Washington Heights, NYC. American Public Health Association Annual Meeting & Exposition; 2012, San Francisco, CA.

Gershon RRM, **McAlexander TP**, Hernández -Cordero LJ, Chu L, Chan M, Perzanowski M. Healthy homes, Healthy Seniors: Baseline Results. American Public Health Association Annual Meeting & Exposition; 2012, San Francisco, CA.

Gershon RRM, Magda LA, Riley H, **McAlexander TP**, Neitzel R. Hearing health and mass transit ridership. American Public Health Association Annual Meeting & Exposition; 2012, San Francisco, CA.

McAlexander TP, Neitzel R, Gershon RRM. The New York City urban soundscape: a pilot study. The International Conference on Urban Health; 2010, New York, NY.

McAlexander TP, Neitzel R, Gershon RRM. Association between urban street noise and neighborhood crime: a pilot field study. American Public Health Association Annual Meeting & Exposition; 2010, Denver, CO.

Gershon RRM, Pearson JM, **McAlexander TP**. A novel tool to address safety hazards in the home healthcare

setting. American Public Health Association Annual Meeting & Exposition; 2010, Denver, CO.

PUBLICATIONS

Malla G, Long DL, Cherrington A, Goyal P, Guo B, Safford MM, Khodneva Y, Cummings DM, **McAlexander TP**, De Silva S, Judd, SE, Hidalgo B, Levitan EB, Carson AP. Neighborhood environment and risk of heart failure: The Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. *Circ: Cardiovasc Qual Outcomes*. 2024; 0:e009867. <https://doi.org/10.1161/CIRCOUTCOMES.123.009867>

Rummo, PE, Kanchi R, Adhikari S, Titus AR, Lee DC, **McAlexander T**, Thorpe LE, Elbel B. Influence of the food environment on obesity risk in a large cohort of U.S. veterans by community type. *Obesity*.2024. <https://doi.org/10.1002/oby.23975>

McAlexander TP, Ryan V, Uddin J, Kanchi R, Thorpe LE, Schwartz BS, Carson AP, Rolka DB, Adhikari S, Pollak J, Lopez P, Smith M, Meeker M, McClure LA. Associations between PM_{2.5} and O₃ exposures and new onset type 2 diabetes in regional and national samples in the United States. *Environmental Research*. 2023; 239(1). <https://doi.org/10.1016/j.envres.2023.117248>

Algur YA, Rummo PE, **McAlexander TP**, De Silva SSA, Lovasi GS, Judd SE, Ryan V, Malla G, Koyama AK, Lee DC, Thorpe LE, McClure LA. Assessing the association between food environment and dietary inflammation by community type: a cross-sectional REGARDS study. *Int J Health Geogr*. 2023; 22(24). <https://doi.org/10.1186/s12942-023-00345-4>

Meeker MA, Schwartz BS, Bandeen-Roche K, Hirsch AG, De Silva SSA, **McAlexander TP**, Black NC, McClure LA. Assessing measurement invariance of a land use environment construct across levels of urbanicity. *GeoHealth*, 2022; 6(10). doi: 10.1029/2022GH000667

McAlexander TP, Malla G, Uddin J, Lee DC, Schwartz BS, Rolka DB, Siegel KR, Kanchi R, Pollak J, Andes L, Carson AP, Thorpe LE, McClure LA. Urban and rural differences in new onset type 2 diabetes: comparisons across national and regional samples in the Diabetes LEAD Network. *SSM – Population Health*, 2022. doi: <https://doi.org/10.1016/j.ssmph.2022.101161>.

McAlexander TP, Jagai JS, McClure LA. Latent growth trajectories of county-level diabetes prevalence in the United States, 2004-2017, and associations with overall environmental quality. *Environmental Epidemiology*, 2022; 6(4). doi: 10.1097/EE9.0000000000000218.

McAlexander TP, Algur Y, Schwartz BS, Rummo PE, Lee D, Siegel KR, Ryan V, Lee NL, Malla G, McClure LA. Categorizing community type for epidemiologic evaluation of community factors and chronic disease across the United States. *Social Sciences & Humanities Open*, 2022; 5(1). doi: 10.1016/j.ssaho.2022.100250.

McAlexander TP, De Silva SA, Meeker MA, Long DL, McClure LA. Evaluation of associations between estimates of particulate matter exposure and new onset type 2 diabetes in the REGARDS cohort. *Journal of Exposure Science and Environmental Epidemiology*, 2021. doi: 10.1038/s41370-021-00391-9.

Rummo PE, Algur Y, **McAlexander TP**, Judd SE, Lopez PM, Adhikari S, Brown J, Meeker M, McClure LA, Elbel B. Comparing competing geospatial measures to capture the relationship between the neighborhood food environment and diet. *Annals of Epidemiology*. 2021; 61. doi: 10.1016/j.annepidem.2021.05.005

McAlexander TP, Bandeen-Roche K, Buckley JP, Pollak J, Michos ED, McEvoy JW, Schwartz BS. Unconventional natural gas development and hospitalization for heart failure in Pennsylvania. *Journal of the*

American College of Cardiology. 2020 Dec 15;76(24):2862-2874. doi: 10.1016/j.jacc.2020.10.023. PMID: 33303076; PMCID: PMC7735256.

Hirsch AG, Carson AP, Lee NL, **McAlexander T**, Mercado C, Siegel K, Black NC, Elbel B, Long DL, Lopez P, McClure LA, Poulsen MN, Schwartz BS, Thorpe LE. The Diabetes Location, Environmental Attributes, and Disparities Network: Protocol for Nested Case Control and Cohort Studies, Rationale, and Baseline Characteristics. *JMIR Research Protocols*. 2020;9(10): e21377. doi: 10.2196/21377. PMID: 33074163; PMCID: 7605983.

Almeter A, Tashie A, Procter A, **McAlexander T**, Browning D, Rudder C, Jackson L, and Araujo R. A needs-driven, multi-objective approach to allocate urban ecosystem services from 10,000 trees. *Sustainability*. 2018, 10(12), 4488.

Savitz DA, Elston B, Bobb JF, Clougherty JE, Dominici F, Ito K, Johnson S, **McAlexander T**, Ross Z, Shmool JLC, Matte TD, Wellenius GA. Ambient fine particulate matter, nitrogen dioxide, and hypertensive disorders of pregnancy in New York City. *Epidemiology*. 2015, 26 (5): 748-757.

McAlexander TP, Gershon RRM, Neitzel RL. Street-level noise in an urban setting: assessment and contribution to personal exposure. *Environmental Health*. 2015, 14 (18).

Gershon RRM, Sherman MF, Magda LA, Riley HEM, **McAlexander TP**, Neitzel R. Mass Transit Ridership and Self-Reported Hearing Health in an Urban Population. *Journal of Urban Health*. 2013, 90 (2): 262-75.

Neitzel RL, Gershon RRM, **McAlexander TP**, Magda LA, Pearson JM. Exposures to Transit and Other Sources of Noise Among New York City Residents. *Environmental Science and Technology*. 2012, 46 (1): 500-508.

INVITED PRESENTATIONS

McAlexander TP. *Environmental features and cardiometabolic disease*. Oral presentation at the Center of Excellence in Environmental Toxicology, University of Pennsylvania, February 2, 2024.

McAlexander TP. *Environmental features and cardiometabolic disease*. Oral presentation at the Urban Health Collaborative Weekly Forum, Drexel University, November 28, 2023.

McAlexander TP. *Defining Community Type for Different Geographies and Building Harmonization of Methods Across Site and Study Designs*. Oral presentation for the Society of Epidemiologic Research's 2021 Symposium: "Multi-site initiative to assess the role of the neighborhood socioeconomic environment and food environment on diabetes incidence: Lessons learned from the Diabetes Location, Environmental Attributes and Disparities (LEAD) Network" June 23, 2021.

McAlexander TP. *Environmental epidemiology and cardio-metabolic disease: new insights, challenges, and emerging opportunities for research*. Department of Epidemiology and Biostatistics, Drexel University Dornsife School of Public Health, January 26, 2021.

McAlexander TP. *Heart Failure Hospitalization, Unconventional Natural Gas Development, and the BNP BioMarker*. Oral presentation at the Pennsylvania League of Women Voters conference on Shale Gas & Health, Pittsburgh, PA, November 19, 2019.

Schwartz BS & **McAlexander TP**. *Shale Gas Development & Health: Research Updates*. Oral presentation at the Pennsylvania League of Women Voters conference on Shale Gas & Health, Pittsburgh, PA, November 13, 2017.

McAlexander TP. *Unconventional Natural Gas Development and Health: A Review of the Epidemiological*

Evidence. Environmental Defense Fund, Washington, DC, October 20, 2016.

McAlexander TP. *Measuring neighborhood resource availability in Durham-Chapel Hill, NC*. United States Environmental Protection Agency Sustainable and Healthy Communities Research Program Seminar Series, October 29, 2013.

COMMUNITY INVOLVEMENT AND PROFESSIONAL ORGANIZATIONS

University of Pennsylvania Center of Excellence in Environmental Toxicology, *Adjunct Member*, March 2023- present

Big Brothers Big Sisters at the Y in central Maryland, *Mentor*, February 2017-August 2019

Environmental Health and Engineering Student Organization (EHESO), Johns Hopkins Bloomberg School of Public Health, 2015-2016, *Secretary*; 2016-2017, *President-Elect*; 2017-2018, *President*

American Public Health Association, Environment Section, August 2010-2017, *Member*; December 2010-2012, *Environment Section's Liaison to the Student Assembly*; December 2010- 2015, *Co-chair, Environment Section Student Involvement Committee*; October 2015-October 2017, *Co-chair, Environment Section Program Planning Committee*

SKILLS

Software Proficiencies: PC/MAC, Word, Excel, Access, Power Point, Publisher, EndNote, HTML, ArcGIS, R statistical software, Python, SAS, and STATA. Working knowledge of Microsoft SQL Server and MPlus.

Analytic Proficiencies: Case-control study designs, longitudinal cohort studies, time-series analyses, multi-level statistical modeling and inference, generalized estimated equations, principal components and latent class analyses, latent growth mixture models, and spatial regression.