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Emma Moynihan, Ph.D., M.P.H.

Senior Scientist | Health Sciences
Bowie
+1-301-291-2507 | emoynihan@exponent.com

Professional Profile

Dr. Moynihan is an environmental health scientist with expertise in environmental epidemiology, applied epidemiology, biostatistics, exposure and risk assessment. occupational health, sustainability, and food systems. She also has extensive experience in statistical programming (R/Python/STATA), retrospective exposure assessment, survey design, developing data visualizations to inform decision making, applying machine learning methods to epidemiological studies and cumulative risk assessment, and spatial data analysis. Her research background includes environmental risk factors of chronic kidney disease, the impacts of climate change on human health, particulate matter (PM), fossil fuel exposure from the extraction ("fracking"), transportation and refinement of crude oil, food system resilience, and adolescent mental health.

Prior to joining Exponent, Dr. Moynihan worked at ICF where she assisted in the design and implementation of epidemiologic surveillance programs for government clients. In this role, she designed questionnaires and surveys, conducted survey interviews and focus groups, preformed quality control, engaged in qualitative research, and evaluated web analytics for government clients to maximize their outreach.

Dr. Moynihan has a Ph.D. in Environmental Health Sciences from The Johns Hopkins University School of Public Health. She focused on exposure assessment, environmental epidemiology, and occupational health. Her dissertation in collaboration with the National Institute of Environmental Health Sciences and National Cancer Institute quantified pesticide and heat exposure in an occupational cohort of pesticide applicators and evaluated their potential associations with chronic kidney disease. During her Ph.D. she also received a certificate in the Risk Sciences and Public Policy and was a Data Science fellow. She received her MPH from The Johns Hopkins University, focusing on Global Environmental Sustainability and Health. Dr. Moynihan's master thesis evaluated the transportation of crude oil through Baltimore, MD and associated health outcomes.

Academic Credentials & Professional Honors

Ph.D., Environmental Health and Engineering, Johns Hopkins University, 2023

M.P.H., Public Health, Johns Hopkins University, 2018

B.A., History, Loyola University Maryland, 2012

Caplan Scholarship Fund in Climate Change and the Environment 2020-2022

U.S. Student Fulbright Award, U.S. Department of State 2013

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Prior Experience

Data Visualization and Epidemiology Intern, Baltimore City Health Department 2020-2021

Student Intern, Maryland Department of Health – Emerging Infections Program 2019-2021

Research Assistant, Johns Hopkins University School of Public Health 2018-2023

Research Assistant, ICF 2016-2017

Research Program Coordinator, Johns Hopkins University School of Medicine 2015-2016

Professional Affiliations

American Industrial Hygiene Association

Publications

Dore DD, Kyle M, Burns D, Murray CR, Watson H, Swaney J, Spevack S, Leonhard M, Simon M, Moynihan E, Lapane KL, Wang SV, Longo CL, Ritchey ME. Cardiovascular safety of fixed-dose extended-release naltrexone/bupropion in clinical practice. Obesity Pillars. 2025;100169. ISSN 2667-3681. https://doi.org/10.1016/j.obpill.2025.100169.

Das, D., Babik, K. R., Moynihan, E., & Ramachandran, G. (2023). Experimental studies of particle removal and probability of COVID-19 infection in passenger railcars. Journal of occupational and environmental hygiene, 20(1), 1–13. https://doi.org/10.1080/15459624.2022.2137298

Moynihan, E., Avraam, C., Siddiqui, S., Neff, R. (2022). Optimization Based Modeling for the Food Supply Chain's Resilience to Outbreaks. Front. Sustain. Food Syst. 6. https://doi.org/10.3389/fsufs.2022.887819

Moynihan, E., * Das, D., * Nicas, M., McCollum, E.D., Ahmed, S., Roy, A. D., Chowdhury, N., Hanif, A.A.M., Babik, K.R., Baqui, A.H. Ramachandran, G. (2021). Estimating residential air exchange rates in rural Bangladesh using a near field-far field model. Building and Environment. 206: https://doi.org/10.1016/j.buildenv.2021.108325

Avraam, C., Zhang, Y., Sankaranarayanan, S., Zaitchik, B., Moynihan, E., Juturu, P., Neff, R., Siddiqui, S. (2021). Optimization-Based Systems Modeling for The Food-Energy-Water Nexus. Current Sustainable/Renewable Energy Report. 8:4-16. https://doi.org/10.1007/s40518-020-00161-5

Beaudry, M. B., Townsend, L., Heley, K., Cogan, E. (maiden name), Schweizer, N. and Swartz, K. (2017) Fulfilling the Common Core Standards and Meeting Students' Needs for Depression Education: ADAP. J School Health. 87: 296–299. https://doi.org/10.1111/josh.12496

*Authors contributed equally

Presentations

Moynihan, E., Parks, C., Sandler D., Ramachandran, G. (October 2022). Quantifying Heat Stress Among Pesticide Applicators in the Agricultural Health Study. 3rd International Symposium to Advance Total Worker Health. (Bethesda, MD).

Moynihan, E., Parks, C., Sandler, D., Ramachandran, G. (May 2022). Pesticide Use in the Agricultural Health Study & Risk of End-Stage Kidney Disease: An Updated Analysis. American Industrial Hygiene Association Annual Conference (AIHce EXP). (Nashville, TN)

Moynihan, E., Parks, C., Sandler, D., Ramachandran, G. (May 2022). A Mixed Methods Approach to Quantifying Occupational Heat Stress in the Agricultural Health Study. American Industrial Hygiene Association Annual Conference (AIHce EXP). (Nashville, TN)

Moynihan, E. (October 2021). Quantifying Occupational Heat Stress Among U.S. Agricultural Workers. University of California Berkeley. Center for Occupational and Environmental Health. (Online)

Moynihan, E. (July 2021). Getting the Denominator Right in Monitoring Racial Disparities in Phased Rollout of COVID-19 Vaccine. Baltimore Data Week: Baltimore Data about COVID-19 Series (Online)

Moynihan, E., Robsky, K., Marx, M., Wedlock, P., Malone, J., Jones, F., Prata Menezes, N., Gurley, E., Babik, K., Kostandova, N., Dzirasa, L., Phelan-Emrick, D. (June 2021). Getting the Denominator Right in Monitoring Racial Disparities in Phased Rollout of COVID-19 Vaccine. Council of State and Territorial Epidemiologists 2021 Annual Conference (Online)

Moynihan, E. (April 2021) New Understandings in Heat Stress. Chesapeake American Industrial Hygiene Association/American Association of Safety Professionals Educational Seminar (Online)

Moynihan, E., Moore, E., Biehl, E., Neff, R. (May 2020). What would a 50% reduction in waste food look like in the United States? Agriculture, Food, and Human Values Society (AFHVS) & Association for the Study of Food and Society (ASFS) Conference (Athens, GA) Abstract accepted; conference cancelled due to COVID-19 pandemic.

Moore, E., Moynihan, E., Biehl, E., Neff, R., (May 2020). What does “acceptable” food look like in a resilient food system? Agriculture, Food, and Human Values Society (AFHVS) & Association for the Study of Food and Society (ASFS) Conference (Athens, GA) Abstract accepted; conference cancelled due to COVID-19 pandemic.

Moynihan, E., * Gorski, I., * & Smith, G.* (May 2018). Fossil fuel by Rail in Baltimore. Annual Symposium on Environmental Justice and Health (College Park, MD)

Moynihan, E., * Gorski, I., * & Smith, G.* (May 2018). Fossil fuel by Rail in Baltimore. Annual Symposium on Environmental Justice and Health (College Park, MD)

Parekh, V., Ruble, A., Townsend, L., Beaudry, M.B., Cogan, E., Schweizer, B., DePaulo, J.R., Swartz, K. (October 2015). Using Mobile Technology to Address Adolescent Depression Education. Poster presented at the International Conference on Communication in Healthcare (New Orleans, LA).

*Authors contributed equally

Additional Education & Training

Johns Hopkins Data Science Fellowship 2022

Certificate in the Risk Sciences and Public Policy, Johns Hopkins School of Public Health 2020