

ANNELISE J. BLOMBERG

Faculty of Medicine, Lund University
annelise.blomberg@med.lu.se

Education

Harvard T.H. Chan School of Public Health, Boston MA

Sc.D., Environmental Health

March 2020

Duke University Pratt School of Engineering, Durham NC

B.S., Civil and Environmental Engineering, Magna Cum Laude

May 2012

Environmental Health Experience

Lund University, Faculty of Medicine, Division of Occupational and Environmental Medicine

Marie Skłodowska-Curie Action (MSCA) postdoctoral fellow

June 2022-Present

Research Engineer

May 2021-May 2022

- Design and execute research studies of health effects of exposures to poly- and perfluoroalkyl substances (PFAS) in the highly-exposed community of Ronneby, Sweden.

Harvard T.H. Chan School of Public Health, Department of Environmental Health

Visiting Scientist

March 2021-Present

Postdoctoral Fellow

Jan. 2020-Feb. 2021

Advisor: Dr. Philippe Grandjean

Parental leave Jan.-March 2020

- Assess health effects of early-life exposures to PFAS, with a specific focus on cardiometabolic outcomes and mixture methods.

Harvard T.H. Chan School of Public Health, Department of Environmental Health

Doctoral Candidate and Researcher

Aug. 2015-Dec. 2020

Dissertation: Exposures and Health Effects of Ambient Particle Radioactivity

Advisor: Dr. Petros Koutrakis

- Assessed health effects of particulate matter (PM) and environmental radiation using time-series analyses, mixed-effects models, survival analysis and causal modeling.

Abt Associates, Environment and Resources Division, Cambridge MA

Associate Analyst and Research Assistant

May 2012-Aug. 2015

- Supported projects for EPA's Toxics Release Inventory program (TRI).
- Researched and wrote chapters of the Massachusetts Global Warming Solutions Act: 5-Year Progress Report in collaboration with several Massachusetts departments.
- Utilized a wide range of public environmental data, including TRI, EIA, NEI, and GHGRP.

Parsons Corporation, Onondaga Lake Site NPL Remediation Program, Syracuse NY

Intern

May-Aug. 2011

- Oversaw construction and communicated between subcontractors and Parsons staff and produced major reports including a groundwater sampling report and project safety plan.

U.S. EPA Region 1, Boston MA

Intern

June-Aug. 2010

- Trained and assisted local municipalities in using GPS to digitally map storm water systems.

Technical Skills

Software: R, SAS, STATA, ArcGIS, Python, Git and GitHub, Tableau

Analyses: time-series models; meta-analysis and meta-regression; repeated measure models with mixed effects; survival analysis; causal inference; random forest regression; multiple informant models

Supervising and Teaching Experience

Lund University, Faculty of Medicine, Division of Occupational and Environmental Medicine

Co-Supervisor, Matilda Martinsson (Graduate) June 2021-Present

Primary Supervisor, Ronja Andersson (Undergraduate) Jan. 2022-June 2022

Harvard T.H. Chan School of Public Health, Boston MA

Teaching assistant, “Research Design in Environmental Health” 2019

Guest lecturer, “Atmospheric Environment” 2019, 2020

Teaching assistant, “Atmospheric Environment” 2017, 2018

Teaching assistant, “Environmental Leadership” (taught by EPA Administrator Gina McCarthy) 2019

Teaching assistant, “Critical Thinking and Action for Public Health Professionals” 2018

Teaching assistant and lecturer, “Air Pollution Exposure Assessment” 2018

- One-week course in Delhi, India in collaboration with the Public Health Foundation of India

Duke University Pratt School of Engineering, Durham NC

Teaching assistant, “Computational Methods in Engineering” 2010

Funded Grants

2022-2024, *Horizon Europe’s Marie Skłodowska-Curie Actions (MSCA)* 2355340 SEK

Postdoctoral fellowship, “Developmental immunotoxicity of perfluoroalkyl substances (PFAS) in a population of highly-exposed children” (#101058697)

PI: Annelise Blomberg

2023-2024, *Swedish Research Council for Health, Working Life and Welfare (Forte)* 2500000 SEK

Postdoctoral fellowship, “Developmental immunotoxicity of perfluoroalkyl substances (PFAS) in a population of highly-exposed children”

PI: Annelise Blomberg (Declined due to overlap with MSCA postdoctoral fellowship)

2023, *Royal Physiographic Society of Lund* 85911 SEK

Young Researchers Endowment travel grant and research grant, “Estimating the start of widespread PFAS exposures in Ronneby, Sweden for future use in developmental PFAS immunotoxicity research.”

PI: Annelise Blomberg

2020, *U.S National Institute of Environmental Health Sciences (NIEHS)* \$29,800

NIEHS Center pilot study, “A pilot study of associations between early-life exposures to per- and polyfluoroalkyl substances and lipoprotein subspecies”

PI: Annelise Blomberg

Honors and Awards

NIEHS paper of the month Sept. 2020

Harvard Graduate Consortium on Energy and Environment Scholar 2016-2018

John F. and Virginia B. Taplin Fellowship Fund 2017-2018

National Academy of Engineering Grand Challenge Scholar	2012
Chi Epsilon and Tau Beta Pi	2012
EPA Region 1 Employee of the Month	2010

Publications

- Blomberg AJ**, Norén E, Haug LS, Lindh C, Sabaredzovic A, Pineda D, Jakobsson K, Nielsen C. Transfer of perfluoroalkyl substances (PFAS) from serum to breastmilk in women highly exposed from contaminated drinking water: a study in Ronneby Mother-Child Cohort. *Environ Health Perspect.* 2023;131(1):017005. <https://doi.org/10.1289/EHP11292>.
- Blomberg AJ**, Haug LS, Lindh C, Sabaredzovic A, Pineda D, Jakobsson K, et al. Changes in perfluoroalkyl substances (PFAS) concentrations in human milk over the course of lactation: A study in Ronneby mother-child cohort. *Environmental Research.* 2023;219:115096. <https://doi.org/10.1016/j.envres.2022.115096>.
- Blomberg AJ**, Mortensen J, Weihe P, Grandjean P. Bone mass density following developmental exposures to perfluoroalkyl substances (PFAS): a longitudinal cohort study. *Environmental Health.* 2022;21(1):113. <https://doi.org/10.1186/s12940-022-00929-w>.
- Blomberg AJ**, Shih Y-H, Messerlian C, Jørgensen LH, Weihe P, Grandjean P, 2021. Early-life associations between per- and polyfluoroalkyl substances and serum lipids in a longitudinal birth cohort. *Environmental Research.* 200, 111400. <https://doi.org/10.1016/j.envres.2021.111400>.
- Shih Y-H, **Blomberg AJ**, Jørgensen LH, Weihe P, Grandjean P. Early-life exposure to perfluoroalkyl substances in relation to serum adipokines in a longitudinal birth cohort. *Environmental Research.* 2021:111905. <https://doi.org/10.1016/j.envres.2021.111905>.
- Shih Y-H, **Blomberg AJ**, Bind M-A, Holm D, Nielsen F, Heilmann C, Weihe P, Grandjean P, 2021. Serum vaccine antibody concentrations in adults exposed to per- and polyfluoroalkyl substances: A birth cohort in the Faroe Islands. *Journal of Immunotoxicology.* 18, 85-92. <https://doi.org/10.1080/1547691X.2021.1922957>.
- Blomberg AJ**, Li L, Schwartz JD, Coull BA, Koutrakis P, 2020. Exposure to Particle Beta Radiation in Greater Massachusetts and Factors Influencing Its Spatial and Temporal Variability. *Environmental Science & Technology.* 54, 6575-6583. <https://doi.org/10.1021/acs.est.0c00454>.
- Blomberg AJ**, Nyhan MM, Bind M-A, Vokonas P, Coull BA, Schwartz J, Koutrakis P, 2020. The Role of Ambient Particle Radioactivity in Inflammation and Endothelial Function in an Elderly Cohort. *Epidemiology.* 31. <https://doi.org/10.1097/EDE.0000000000001197>.
- Blomberg AJ**, Coull BA, Jhun I, Vieira CL, Zanobetti A, Garshick E, Schwartz J, Koutrakis P, 2018. Effect modification of ambient particle mortality by radon: A time series analysis in 108 US cities. *Journal of the Air & Waste Management Association.* 1-11. <https://doi.org/10.1080/10962247.2018.1523071>.
- Li L, Dominici F, **Blomberg AJ**, Schwartz J, Coull BA, Spengler J, Wei Y, Lawrence J, Koutrakis P, 2022. Exposure to Unconventional Oil and Gas Development and All-cause Mortality in Medicare Beneficiaries. *Nature Energy.* <https://doi.org/10.1038/s41560-021-00970-y>.
- Li L, Stern RA, **Blomberg AJ**, Kang C-M, Wei Y, Liu M, et al., 2022. Ratios between Radon Concentrations in Upstairs and Basements: A Study in the Northeastern and Midwestern United States. *Environmental Science & Technology Letters.* <https://doi.org/10.1021/acs.estlett.1c00989>.

- Schiff JE, Vieira CL, Garshick E, Wang V, **Blomberg AJ**, Gold DR, et al. The role of solar and geomagnetic activity in endothelial activation and inflammation in the NAS cohort. *Plos one*. 2022;17(7):e0268700. <https://doi.org/10.1371/journal.pone.0268700>.
- Anand K, Vieira CL, Garshick E, Wang V, **Blomberg AJ**, Gold DR, et al. Solar and geomagnetic activity reduces pulmonary function and enhances particulate pollution effects. *Science of The Total Environment*. 2022:156434. <https://doi.org/10.1016/j.scitotenv.2022.156434>.
- Li L, **Blomberg AJ**, Stern, RA, Kang, C-M, Papatheodorou, S, Wei, Y, Liu, M, Peralta, AA, Vieira, CLZ, Koutrakis, P, 2021. Predicting Monthly Community-Level Domestic Radon Concentrations in the Greater Boston Area with an Ensemble Learning Model. *Environmental Science & Technology*. 55, 7157-7166. <https://doi.org/10.1021/acs.est.0c08792>.
- Li L, **Blomberg AJ**, Lawrence J, Réquia WJ, Wei Y, Liu M, Peralta AA, Koutrakis P, 2021. A spatiotemporal ensemble model to predict gross beta particulate radioactivity across the contiguous United States. *Environment International*. 156, 106643. <https://doi.org/10.1016/j.envint.2021.106643>.
- Li L, **Blomberg AJ**, Spengler JD, Coull BA, Schwartz JD, Koutrakis P, 2020. Unconventional oil and gas development and ambient particle radioactivity. *Nature Communications*. 11, 5002. <https://doi.org/10.1038/s41467-020-18226-w>.
- Papatheodorou S, Gold DR, **Blomberg AJ**, Hacker M, Wylie BJ, Requia WJ, Oken E, Fleisch AF, Schwartz JD, Koutrakis P, 2020. Ambient particle radioactivity and gestational diabetes: A cohort study of more than 1 million pregnant women in Massachusetts, USA. *Science of The Total Environment*. 733, 139340. <https://doi.org/10.1016/j.scitotenv.2020.139340>.
- Peralta AA, Link MS, Schwartz J, Luttmann-Gibson H, Dockery DW, **Blomberg AJ**, Wei Y, Mittleman MA, Gold DR, Laden F, Coull BA, Koutrakis P, 2020. Exposure to Air Pollution and Particle Radioactivity With the Risk of Ventricular Arrhythmias. *Circulation*. 142, 858-867. <https://doi.org/10.1161/CIRCULATIONAHA.120.046321>.
- Huang S, Xiong J, Vieira CLZ, **Blomberg AJ**, Gold DR, Coull BA, Sarosiek K, Schwartz JD, Wolfson JM, Li J, Koutrakis P, 2020. Short-term exposure to ambient particle gamma radioactivity is associated with increased risk for all-cause non-accidental and cardiovascular mortality. *Science of The Total Environment*. 721, 137793. <https://doi.org/10.1016/j.scitotenv.2020.137793>.
- Yitshak-Sade M, **Blomberg AJ**, Zanobetti A, Schwartz JD, Coull BA, Kloog I, Dominici F, Koutrakis P, 2019. County-level radon exposure and all-cause mortality risk among Medicare beneficiaries. *Environment International*. 130, 104865. <https://doi.org/10.1016/j.envint.2019.05.059>.
- Gao X, Koutrakis P, **Blomberg AJ**, Coull B, Vokonas P, Schwartz J, Baccarelli AA, 2019. Short-term ambient particle radioactivity level and renal function in older men: Insight from the Normative Aging Study. *Environment International*. 131, 105018. <https://doi.org/10.1016/j.envint.2019.105018>.
- Nyhan MM, Rice M, **Blomberg AJ**, Coull BA, Garshick E, Vokonas P, Schwartz J, Gold DR, Koutrakis P, 2019. Associations between ambient particle radioactivity and lung function. *Environment International*. 130, 104795. <https://doi.org/10.1016/j.envint.2019.04.066>.
- Zilli Vieira CL, Alvares D, **Blomberg, AJ**, Schwartz J, Coull BA, Huang S, Koutrakis P, 2019. Geomagnetic disturbances driven by solar activity enhance total and cardiovascular mortality risk in 263 U.S. cities. *Environmental Health*. 18, 83. <https://doi.org/10.1186/s12940-019-0516-0>.

Nyhan MM, Coull BA, **Blomberg AJ**, Vieira CL, Garshick E, Aba A, Vokonas P, Gold DR, Schwartz J, Koutrakis P, 2018. Associations Between Ambient Particle Radioactivity and Blood Pressure: The NAS (Normative Aging Study). *Journal of the American Heart Association*. 7, e008245. <https://doi.org/10.1161/JAHA.117.008245>.

Posters and Presentations (selected)

“Early-life exposures to PFAS from breastfeeding” (invited oral presentation). Swedish Medical Association's Association for Occupational and Environmental Medicine (ARM) Autumn Meeting. November 30, 2022.

“Transfer of perfluoroalkyl substances (PFAS) from serum to breastmilk and breastmilk concentrations over the course of lactation: a study in the highly-exposed Ronneby Mother-Child Cohort” (poster). International Society for Environmental Epidemiology (ISEE) conference. September 20, 2022.

“Transfer of PFAS from serum to breastmilk in women highly exposed from contaminated drinking water” (poster). International Conference on Prenatal Programming and Toxicity (PPTOX). January 12, 2022.

“Bone mass in late childhood after developmental exposure to perfluorinated alkylates (poster). FLUOROS Global 2021. October 4, 2021.

“Early-life associations between poly- and perfluoroalkyl substances and serum lipids in a longitudinal birth cohort” (oral presentation). International Society for Environmental Epidemiology (ISEE) conference. August 24, 2021.

“Effect modification of PM_{2.5} by radon: A time-series analysis in 108 U.S. cities” (oral presentation). Internal U.S. Environmental Protection Agency webinar. December 17, 2020.

“Early-life associations between poly- and perfluoroalkyl substances and serum lipids in a longitudinal birth cohort” (poster). NIEHS Superfund Research Program Annual Meeting. December 14, 2020.

“Particle radioactivity and cardiovascular outcomes in an elderly cohort” (oral presentation). Internal U.S. Environmental Protection Agency webinar. November 19, 2020.

“Assessing exposures to particle radioactivity in greater Massachusetts” (oral presentation). Internal U.S. Environmental Protection Agency webinar. November 5, 2020.

“Exposure to particle beta radiation in greater Massachusetts and factors influencing its spatial and temporal variability” (poster). International Society of Exposure Science (ISES) conference. September 21-22, 2020.

“Exposures and Health Effects of Ambient Particle Radioactivity.” Dissertation defense. December 2019.

“The role of ambient particle radioactivity in inflammation and endothelial function in an elderly cohort” (poster). International Society for Environmental Epidemiology (ISEE) conference. August 2019.

“Effect modification of ambient particle mortality by radon: a time series analysis in 108 U.S. cities” (poster). Women in Data Science Cambridge Conference. February 2019.

Academic Services

Peer Reviewer

- Journals: Environmental Health Perspectives (EHP), Environmental Research, Chemosphere, Circulation, Environmental Epidemiology, Journal of Occupational and

Environmental Medicine, Journal of the Air and Waste Management Association, Science of the Total Environment, Atmosphere, Harvard Public Health Review, International Journal of Environmental Research and Public Health, Toxics

- Conferences: International Society for Env. Epidemiology (ISEE) 2021 and 2022.

Organizing committee member

- Lund Strategic Research Areas (SRA) Sustainability Workshops 2022-present
- Harvard T.H. Chan Postdoctoral Poster Day 2021

Academic societies (current or recent membership)

- International Society of Environmental Epidemiology (ISEE)
- International Society of Exposure Science (ISES)