

**ANNELISE J. BLOMBERG**

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Education

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**Harvard T. H. Chan School of Public Health, Boston MA**  
ScD, Environmental Health Expected 2020

**Duke University Pratt School of Engineering, Durham NC**  
B.S., Civil and Environmental Engineering, Magna Cum Laude 2012

Environmental Health Experience

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**Harvard T. H. Chan School of Public Health, Department of Environmental Health**  
Dissertation: Environmental Radiation and Air Pollution: Investigating the Effects of Ambient Particle Radioactivity on Human Health (Advisor: Dr. Petros Koutrakis) 2015-present

- Particulate air pollution (PM<sub>2.5</sub>) was the fifth leading global risk factor for death in 2015, but the properties of PM<sub>2.5</sub> responsible for its negative health effects are still not fully understood. My research focuses on whether particle radioactivity contributes to its toxicity.
- Developed methodology for assessing population exposures to ambient particle radioactivity.
- Analyzed health effects of particulate matter (PM) and environmental radiation using time-series analyses, mixed-effects models, survival analysis and causal modeling.
- Managed and utilized large exposure and health outcome datasets, including Medicare data.
- Authored and co-authored several academic papers and presented at multiple conferences.

**Abt Associates Environment and Resources Division, Cambridge MA**  
Associate Analyst and Research Assistant 2012-2015

- Supported projects for EPA’s Toxics Release Inventory program. Created content for the annual TRI National Analysis, developed and managed TRI industry trainings, and evaluated economic impacts of proposed future regulations.
- Researched and wrote chapters of the Massachusetts Global Warming Solutions Act: 5-Year Progress Report in collaboration with individuals across several Massachusetts divisions and departments.
- Utilized a wide range of public data, including TRI, EIA, NEI, and GHGRP.
- Improved sustainability of internal company practices as a representative for Abt’s Global Sustainability program.

**Parsons Corporation, Onondaga Lake Site NPL Remediation Program, Syracuse NY**  
Intern 2011

- Oversaw site construction and communicated between subcontractors and Parsons staff, and resolved site disputes and engineering questions.

- Produced major reports including a Groundwater Sampling Report and site-specific Project Safety Plan.

### **EPA Region 1, Boston MA**

Intern 2010

- Trained and assisted employees of local municipalities to use GPS to digitally map storm water systems, and standardized practices for data collection.

### Teaching Experience

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#### **Public Health Foundation of India (PHFI) and Harvard T. H. Chan School of Public Health**

2018

- Designed and taught a one-week intensive class on air pollution at the Public Health Foundation of India in Delhi, in partnership with faculty from the Harvard School of Public Health and the Indian Institute of Technology, Kanpur.

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

Teaching Assistant, “Environmental Leadership” 2019

- Worked with EPA Administrator Gina McCarthy to develop lectures and assignments for a semester-long course on environmental leadership.
- Graded student policy memos and provided feedback.

Teaching Assistant, “Research Design in Environmental Health” 2019

- Assisted doctoral students in designing and writing their thesis research proposals.
- Provided feedback on practice presentations and coordinated faculty reviewers from across the department.

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

- Managed student labs on smoking prevention and cessation efforts.
- Graded policy memos and group proposals for state-specific tobacco intervention plans.

Course Assistant, Harvard edX, “Professional Certificate in Data Science” 2018

- Created evaluations and reviewed content for a series of EdX courses on data science.

Teaching Assistant, “Atmospheric Environment” 2017, 2018

Guest lecturer 2019

- Managed a series of labs teaching students to use software for air quality modeling (AERMOD and EPA PMF 5.0).
- Developed course materials and graded assignments.

#### **Duke Office of Information Technology, Durham NC**

Student Technology Trainer 2010

- Wrote and delivered seminars to faculty and students on using software for research and presentations

## Duke University Pratt School of Engineering, Durham NC

Teaching Assistant, “Computational Methods in Engineering”

2010

- Trained freshman students in the use of MATLAB to solve diverse engineering problems.

## Publications

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**Blomberg, Annelise J.**, Brent A. Coull, Iny Jhun, Carol L. Z. Vieira, Antonella Zanobetti, Eric Garshick, Joel Schwartz, Petros Koutrakis. (2019). Effect modification of ambient particle mortality by radon: a time series analysis in 108 U.S. cities. *J Air Waste Manag Assoc*, 69(3):266-276.

Nyhan, Marguerite M., Brent A. Coull, **Annelise J. Blomberg**, Carol L.Z. Vieira, Eric Garshick, Abdulaziz Aba, Pantel Vokonas, Dane R. Gold, Joel Schwartz, Petros Koutrakis. (2018). Associations between ambient particle radioactivity and blood pressure: the NAS (Normative Aging Study). *J Am Heart Assoc*, 7(6) e008245.

Garshick, Eric; Stephanie Grady, Brent A. Coull, **Annelise J. Blomberg**, Jamie E. Hart, Joel Schwartz, Francine Laden, Petros Koutrakis. (2018). Plasma CRP and Response to Radon and Black Carbon in COPD Patients. *ISEE Conference Abstracts*, (1).

## Posters and Presentations

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“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.

“Examining Potential Modification of Particle-associated Mortality by Radon” (poster). Harvard Air, Climate and Energy Center Science Advisory Committee Meeting. May 2018.

“Environmental Radiation and Air Pollution: Investigating a Potential Interaction.” MIT and HSPH Air Climate and Energy Center Seminar, hosted by Dr. Petros Koutrakis. March 2018.

## Academic Services

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Peer Reviewer for *Circulation*; *Journal of the Air and Waste Management Association*

Organize and run a twice-monthly department-wide “Works in Progress” lecture series, where graduate and post-graduate students present their current work and receive feedback and comments from other researchers.

## Honors and Awards

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Harvard Graduate Consortium on Energy and Environment Scholar	2016-2018
National Academy of Engineering Grand Challenge Scholar	2012
Chi Epsilon and Tau Beta Pi	2012
EPA Region 1 Employee of the Month	2010

## Technical Skills

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**Software:** R, SAS, STATA, ArcGIS, Python, Git and GitHub, Tableau, SQLite, Slurm and HTCondor (Cluster Computing Managers)

**Air Pollution Modeling:** AERMOD, EPA PMF 5.0

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

## References

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of the Department of Biostatistics  
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