

Xindi (Cindy) Hu, Sc. D.

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EXECUTIVE SUMMARY

Broadly-trained data scientist with expertise in public health, environmental policy, health care policy, quantitative research, and advanced data analytics. Experience includes translating scientific research to inform decision-making; grant writing; and communicating science to both specialized and popular audiences. Technical skills include longitudinal analysis, machine learning, spatial statistics, Bayesian statistics, social network analysis, text mining, and sentiment analysis using Python, R, Matlab, Stata, SAS, SQL, ArcGIS, QGIS, Web-development, HTML, CSS, and interactive data visualization using JavaScript D3.

EDUCATION

- 2018 D.Sc. in Environmental Health, major in Risk and Decision Sciences**
Harvard T.H. Chan School of Public Health, Boston, MA
Faculty Advisor: Elsie Sunderland, Gordon McKay Professor of Environmental Chemistry
Thesis: From Source To Dose: Modeling Human Exposure To Poly- and Perfluoroalkyl Substances
- 2014 M.Sc. in Environmental Health**
Harvard T.H. Chan School of Public Health, Boston, MA
- 2012 B.Sc. in Environmental Sciences**, Peking University, Beijing, China

PROFESSIONAL EXPERIENCE

- Oct 2018 Data Scientist**, Mathematica Policy Research, Washington, DC
- June 2018 Postdoctoral Fellow in Environmental Science & Engineering**
John A. Paulson SEAS, Harvard University, Cambridge, MA
Faculty Advisor: Elsie Sunderland, Gordon McKay Professor of Environmental Chemistry
- 2016 Summer Associate**, RAND Corporation, Santa Monica, CA
- 2013 Biostatistics Intern**, National Institute of Public Health of Mexico, Cuernavaca, Mexico

PUBLICATIONS

Journals (peer-reviewed)

- Hu, X.C.**, Tokranov A. K., ...& Sunderland, E. M. Tap water contributions to plasma concentrations of poly- and perfluoroalkyl substances (PFASs) in a nationwide prospective cohort of U.S. women. *under review*.
- Dassuncao, C., **Hu, X. C.**, ...& Sunderland, E. M. Shifting global exposures to poly- and perfluoroalkyl substances evident in longitudinal birth cohorts from a seafood consuming population. *Environmental Science & Technology*, 2018, 52 (6), 3738-3747.
- Hu, X. C.**, Dassuncao, C., ...& Sunderland, E. M. Can profiles of poly- and perfluoroalkyl substances (PFASs) in human serum provide information on major exposure sources? *Environmental Health*, 2018 17:11.
- Dassuncao, C., **Hu, X. C.**, ...& Sunderland, E. M. Temporal shifts in poly- and perfluoroalkyl substances (PFASs) in North Atlantic pilot whales indicate large contribution of atmospheric precursors. *Environmental Science & Technology*, 2017, 51(8), 4512-4521.
- Hu, X. C.**, Andrews, D. Q., Lindstrom, ...& Sunderland, E. M. Detection of poly- and perfluoroalkyl Substances (PFASs) in US drinking water linked to industrial sites, military fire training areas, and wastewater

- treatment plants. *Environmental Science & Technology Letters*, 2016, 3(10), 344-350.
6. Zhang, X., Lohmann, R., Dassuncao, C., **Hu, X. C.**, ...& Sunderland, E. M. Source attribution of poly- and perfluoroalkyl substances (PFASs) in surface waters from Rhode Island and the New York Metropolitan Area. *Environmental Science & Technology Letters*, 2016, 3(9), 316-321.
 7. **Hu, X.**, Gao, F., Hu, J. Health risk assessment of iodine status in Chinese residents. *Asian Journal of Ecotoxicology*, 2012, 7(3): 285-291.
 8. Tong, Y., Zhang, W., **Hu, X.**,...& Wang, X. Model description of trophodynamic behavior of methylmercury in a marine aquatic system. *Environmental Pollution*, 2012:166, 89-97.

Book chapters

1. **Hu, X. C.**, Sunderland, E. M. Mercury. Chapter in Lippmann, M. ed., *Environmental toxicants: human exposures and their health effects (4th Edition)*. John Wiley & Sons, in press to be published in 2019.
2. Cifuentes, E., Steve Rothenberg, ..., **Hu, X.** et al. Controversy associated risks the ingestion of contaminated fish and measures to protect health in Lake Chapala, Mexico. Teaching case for Instituto Nacional de Salud Publica (in Spanish), Cuernavaca, Mexico, Sep 2015.

PRESENTATIONS

Conference Presentations

- Hu, X. et al.**, Tap water intake of poly- and perfluoroalkyl substances (PFASs) in relation to serum concentrations in a nationwide prospective cohort of U.S. women. SETAC Europe, Rome, Italy, May 2018.
- Hu, X. et al.**, Predicting exposure to chemical mixtures in drinking water for private well owners. Dana-Farber Cancer Institute and Frontier Science and Research Technology Foundation Marvin Zelen Memorial Symposium, Boston, MA, April 2018.
- Hu, X. et al.**, Tap water contributions to serum concentrations of poly- and perfluoroalkyl substances (PFASs) in a nationwide prospective cohort of U.S. women. (Invited Talk). Geological Society of America Northeastern section meeting, Burlington, VT, March 2018.
- Hu, X. et al.**, Can Profiles of Poly- and Perfluoroalkyl Substances (PFASs) in Human Serum Provide Information on Major Exposure Sources? Superfund Research Program meeting, Philadelphia, PA, Dec 2017.
- Hu, X. et al.**, Geospatial examination of chemical mixtures in drinking water and mortality in women in the Nurses' Health Study. International Society of Environmental Epidemiology, Sydney, Australia, Sep 2017.
- Hu, X. et al.**, Predicting exposure to chemical mixtures in drinking water for private well owners. International Society for Environmental Epidemiology, Sydney, Australia, Sep 2017.
- Hu, X. et al.**, Advanced Data Integration for Epidemiologic Modeling in Benefit-Cost Analysis: Addressing the Challenge to Evaluate Preventive Interventions for Emerging Diseases. Society for Benefit-Cost Analysis, Washington, DC, March 2017.
- Hu, X. et al.**, Sources of human exposure to poly- and perfluoroalkyl substances (PFASs). Society of Environmental Toxicology and Chemistry, Orlando, FL, Nov 2016.
- Hu, X. et al.** Spatial variation of PFOS in drinking water in the United States (Webinar). Green Science Policy Institute, Berkeley, CA, Oct 2015.
- Hu, X.** Two-step shrinkage-based regression strategy for assessing health effects of chemical mixtures in environmental epidemiology. NIEHS workshop, RTP, NC, July 2015.

Media Coverage

- "Immigrant children in U.S. detention camps could face yet another health hazard: contaminated water". [Popular Science](#), June 28, 2018.
- "Shea-Porter Urges Congress to Fund PFC Water Health Study, Including at Pease," [InDepthNH](#), July 18, 2017.
- "Don't Drink the Water," [Scientific American](#), March 14, 2017
- "Researchers find unsafe levels of industrial chemicals in drinking water of 6 million Americans" Washington Post, Aug 9, 2016
- "Unsafe levels of toxic chemicals found in drinking water of 33 states," [Harvard Gazette](#), Aug 9, 2016
- "Study: Public water supply is unsafe for millions of Americans," [CNN](#): Aug 9, 2016
- "Exchange program helps turn public health theory into practice," [Harvard T.H. Chan School of Public](#)

[Health](#), Dec 13, 2013

Science Policy Blogpost

"The Most Widely Used Pesticide, One Year Later," [Harvard Science in the News](#), April 17, 2018
"Call for the pass of chemical safety reform," [Harvard Science in the News](#), March 2, 2015

Data visualization

"An interactive website on the quality of U.S. drinking water," [Think before you drink](#), Dec 17, 2017

TEACHING & MENTORING EXPERIENCE

Guest lecturer, Harvard T.H. Chan School of Public Health

Two lectures on "Unregulated chemicals in drinking water" and "Drinking water quality standards." [Water Pollution](#), Graduate Course (2017). 18 students.

Content developer, HarvardX

Review course material, moderate class forum, coordinate with community teaching assistants, edit html Energy within environmental constraints, MOOC (2018).

Teaching assistant, Harvard T.H. Chan School of Public Health

Led discussion sections; developed and graded all assignments; advised students on their final projects; [Atmospheric Environment Seminars](#), Graduate Course, (2015). 24 students.
[Risk Assessment](#), Graduate Course (2014). 22 students.

Mentoring

2017-2018 Adela Chovancova, Harvard Extension School, Major in Biotechnology
2017- present Beverly Ge, Harvard College, Major in Environmental Science and Public Policy
2017 Alina McIntyre, Tufts University, Major in Community Health
2015-2016 Jahred Liddie, Harvard College, Major in Environmental Science and Public Policy

PROFESSIONAL SERVICE

Professional Activities

Consultant, Covington & Burling LLP (2017)

Leadership

Session Chair, for Society of Environmental Toxicology and Chemistry Europe (2018)
Organizing committee member, Chinese Environmental Scholars Forum (2017)
Organizing committee, Nudging Toward a Cleaner Future, Harvard Behavioral Insight Student Group (2016)
Chair, Environmental Health Student Advisory Committee (2015)
President, Chinese Students and Scholars Association (2013-14)
Student Leadership Circle (2013)

Reviewer

PLOS Biology, Science of the Total Environment, Environmental Science & Technology

Collaborations

Led a group paper with experts from regulatory agencies, academic institutions, and NGOs
Collaborated with RAND researchers on public outreach strategies on social media
Collaborated with researchers from Mexico and the US to publish a teaching case on prenatal exposure to heavy metals

Grantsmanship

Co-authored the proposal for NIEHS Superfund Research Program P42ES027706 (PI: Sunderland) (2017)
Co-authored the proposal for a Pilot Project grant from the Harvard-NIEHS Center for Environmental Health P30ES000002 (PIs: Laden and Sunderland) (2016)
Co-authored the progress report for Smith Family Foundation (PI: Sunderland) (2015)

Principal investigator, Harvard Office of Sustainability Student Grant, \$5000 (2014)