CLIFTON DASSUNCAO

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EDUCATION

2018   **Doctor of Science, Harvard T. H. Chan School of Public Health**
Environmental Health, Dissertation: "Modeling global exposures to poly and perfluoroalkyl substances (PFASs) in aquatic biota and humans"

2013   **Master of Science, Harvard T. H. Chan School of Public Health**
Environmental Health: Exposure, Epidemiology, and Risk

2009   **Bachelor of Science, Massachusetts Institute of Technology**
Environmental Engineering with a Minor in Mathematics

RESEARCH EXPERIENCE

2011 - Present   **Harvard University Biogeochemistry of Global Contaminants Group, Cambridge, MA**

Postdoctoral Fellow/Graduate Researcher. Modeled contaminant transport in the environment and human exposures. Analyzed perfluoroalkyl substances (PFASs), an emerging contaminant, with liquid chromatography mass spectrometry (LC-MS/MS) in pilot whale tissue in conjunction with levels in serum from children in multiple birth cohorts from the Faroe Islands where pilot whale is a part of the traditional diet. Utilized multivariate statistical techniques in R and Matlab including principle component analysis (PCA), marginal regressions, mixed models to characterize changing exposures. Confirmed drivers of change with mechanistic bioaccumulation and physiologically-based pharmacokinetic models.

2008-2009   **MIT Sea Grant, Cambridge, MA**

Researcher. Quantified the risk of invasive marine species in the northeastern United States. Cleaned and compiled shipping and environmental data with MS Access. Spatially analyzed with GIS. Wrote two reports on findings, which earned recognition of a scholarship. Presented results to the Northeast Aquatic Nuisance Species Panel.

2008   **MIT Travel and Research Experience (TREX), Cambridge, MA**

Undergraduate Researcher. Traveled to Hawaii to perform water quality tests. Led a group of students in collecting water samples and water quality parameters. Estimated ground-hydrology parameters with hydrology model in MATLAB. Analyzed nutrient concentrations with a spectrophotometer. Presented results to local park management.

2007   **MIT Media Lab, Cambridge, MA**

Undergraduate Researcher. Worked with environmental acoustic detection devices. Tested equipment for bugs in field and in lab. Designed and built prototype circuit boards with CAD. Traveled to other universities to promote collaboration.

2006   **MIT Early Childhood Cognition Lab, Cambridge, MA**

Undergraduate Researcher. Studied causal inferences in children under ten. Recruited and tested child subjects at the Boston Museum of Science. Built stimuli (toys) for causal studies. Analyzed and presented response data to other labs.

PROFESSIONAL EXPERIENCE

2014 – 2015   **Fenway Health, Boston, MA**

Part-time Contractor. Developed SAS programs to analyze data from a cross-sectional community needs assessment survey relating smoking habits and LGBT health outcomes. Cleaned data, calculated statistics, and prepped data for further analyses. After completion of initial work, awarded additional contract.

2012 – 2013   **U.S. Geological Survey (USGS), Boston, MA**
Part-time Contractor. Attended working group on the Western Mercury Synthesis Effort. Assisted in data cleanup and compilation to assist in regression analyses of relationships between mercury levels and various environmental metrics.

2012 **Centers for Disease Control and Prevention (CDC), Atlanta, GA**

Intern. Characterized U.S. exposures to mixtures by analyzing EPA Toxics Release Inventory in combination with Toxicity Equivalence factors derived from the CalTOX exposure model using MSAccess. Developed a Quantitative Structure Activity Relationship (QSAR) model for the effects of OH-PCBs on thyroid hormone activity using Tsar software. Compared modeled levels of organic pollutants in tissue to experimental data using a bioaccumulation model.

2009 – 2011 **Cadmus Group, Inc., Boston ,MA**

Analyst. Designed and created MS Access database for EPA's Candidate Contaminant List 3 including user interface and formatted reports. Helped develop methodology for comparing data from school monitoring programs to data acquired for the Lead and Copper Rule. Modeled contaminant occurrence in drinking water with both Bayesian and Classical statistical methods with R. Mapped indicators of vulnerability to climate change with GIS for USACE and EPA.

TEACHING/MENTORING EXPERIENCE

2018 **Harvard John A. Paulson School of Engineering and Applied Sciences**

Thesis Co-Director. Guided Master's Student Adela Chovancova's thesis project on toxic chemicals in surface waters and fish in New Hampshire. Trained in statistical and laboratory methods, reviewed thesis.

2017 **Harvard T.H. Chan School of Public Health, Boston, MA**

Teaching Fellow. Teaching assistant for the Harvard graduate class on Water Pollution. Created and graded homework and solution-sets, held office hours.

2014 **Harvard College, Cambridge, MA**

Teaching Fellow. Teaching assistant for the Harvard undergraduate applied math class Introduction to Scientific Computing. Created and graded homework and solution-sets, held office hours, and guided groups on final projects.

PUBLICATIONS

2018 **Dassuncao, C.**, Hu X. C., Nielsen, F., Weihe, P., Grandjean, P., Sunderland, E.M. Shifting Global Exposures to Poly- and Perfluoroalkyl Substances (PFASs) Evident in Longitudinal Birth Cohorts from a Seafood Consuming Population. Environmental Science & Technology 10.1021/acs.est.7b06044.

2018 Hu X. C., **Dassuncao, C.**, Zhang X., Grandjean, P., Weihe, P., Webster G. M., Nielsen, F., Sunderland, E.M. Can Profiles of Poly- and Perfluoroalkyl Substances (PFASs) in Human Serum Provide Information on Major Exposure Sources? Environmental Health 17:11.

2018 Schartup, A. T., Qureshi, A., **Dassuncao, C.**, Thackray, C. P., Harding, G., and Sunderland, E.M. A Model for Methylmercury Uptake and Trophic Transfer by Marine Plankton. Environmental Science & Technology, 52 (2).

2017 Yeung, L., Mabury, S., **Dassuncao, C.**, Zhang, X., Sunderland, E. M., Lohmann, R. Vertical Profiles, Sources and Transport of PFASs in the Arctic Ocean. Environmental Science & Technology, 51 (12).

2017 **Dassuncao C.**, Hu X. C., Zhang X., Bossi, R., Dam M., Mikkelsen B., 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, 51 (8).

2017 Zhang. X., Zhang Y., **Dassuncao C.**, Lohmann R., Sunderland E.M. North Atlantic deep water formation inhibits high Arctic contamination by continental perfluorooctane sulfonate (PFOS) discharges. Global Biogeochemical Cycles, 31(8).

2016 Zhang, X., Lohmann, R., **Dassuncao, C.**, Hu, X. C., Weber, A. K., Vecitis, C. D., & 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, 3 (9).

2009 **Dassuncao, C.** Temperature and Salinity Tolerances predict range expansion for two invasive marine invertebrates. MIT. Sea Grant College Program. MITSG 09-32.

2008 **Dassuncao, C**. Geographical Analysis of Ballast Water Data and Potential Threats of Invasive Species for the Northeastern United States. MIT. Sea Grant College Program. MITSG 08-51.

CONFERENCE PRESENTATIONS

2018	**Dassuncao C.,** Hu X., Grandjkean, P., Nielsen F., Weihe P., Sunderland E. M. The Growing Role of Seafood Consumption in Exposures to Legacy Poly and Perfluoroalkyl Substances (PFASs). Society of Environmental Toxicology and Chemistry (SETAC) Europe. Rome, Italy.
2017	**Dassuncao C.,** Bossi R., Dam M., Hu X., Mikkelsen, P., Zhang, X., Sunderland, E. M., Poly and Perfluoroalkyl Substances (PFASs) in a Marine Food Web and Implications for Human Exposure. Society of Environmental Toxicology and Chemistry (SETAC) North America. Orlando, Florida
2014	**Dassuncao C.,** Bossi R., Dam M., Hu X., Mikkelsen, F., Weihe, P., Zhang, X., Sunderland, E. M., Temporal trends in perfluorinated alkylated substances (PFASs) in pilot whales from the Faroe Islands. SciX. Providence, Rhode Island
2012	**Dassuncao, C**., Santillana, M., Buckee, C., Grad, Y., Sunderland E.M., Modeling Cholera Outbreaks with Environmental Satellite Data and Healthmap.org. "Cloudy with a Chance of Solutions: The Future of Water" Science Symposium. Radcliffe Institute. Cambridge, Massachusetts. [Poster]
2009	**Dassuncao, C.,** Risky Business: Predicting the Likelihood of Marine Species Invasions. Northeast Aquatic Nuisance Species Panel. Salem, Massachusetts.

AWARDS

2014	**Environmental Protection Agency (EPA) STAR Fellowship** (2014) Merit fellowship based on research proposal for two years of doctoral level funding
2012	**Centers for Disease Control and Prevention (CDC) Best Graduate Student Intern Presentation** Best presentation of graduate student interns on "Modeling Cholera outbreaks with Satellite Data"
2011	**Harvard T.H. Chan School of Public Health, Leslie Silverman Scholar** Full two-year merit scholarship given to one entering Master's student in the Department of Environmental Health
2009	**MIT Sea Grant, Judge Paul J. Garrity Scholarship** Scholarship awarded as an undergraduate for writing two reports on invasive species

SKILLS

Computer Skills: R, MATLAB, ArcGIS, Stata, SAS, MSAccess, SQL, Illustrator
Other: Fluent Portuguese, Ceramics, Soccer