

Rachel Massingill, M.P.H.

SCIENTIST II

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Rachel Massingill is a scientist in ToxStrategies' Causation Analysis Practice. She specializes in investigating health outcomes associated with harmful chemical exposures, including per- and poly-fluoroalkyl substances (PFAS) and organochlorine pesticides, and has experience in conducting exposure assessment. While pursuing her master's degree at Emory University's Rollins School of Public Health, Ms. Massingill served as a research assistant in exposomics, and studied the associations between signatures of PCBs (polychlorinated biphenyls) and OCPs (organochlorine pesticides), and their influence on B-cell activating markers that predict the risk of non-Hodgkin lymphoma. As an environmental and community health researcher, she worked on a National Institute of Environmental Health Sciences (NIEHS)-funded project in which she collected biological samples from a tribal community for biomonitoring of PFAS and flame-retardant chemicals originating from former military sites, and additionally developed a framework for a community-based cancer registry to capture precise rates of cancer morbidity and mortality in those communities. Ms. Massingill is skilled in the use of a variety of software packages for interpreting data, including R and SAS, and she has practical experience in field work as well as in a wide range of laboratory procedures.

Ms. Massengill recently completed her Master of Public Health degree and her thesis addressed predictors of emerging PFAS in U.S. adults. It is the first biomonitoring study to quantify the levels of ultrashort-chain PFAS in a U.S. population.

EDUCATION AND DEGREES EARNED

- 2024 Master of Public Health (M.P.H.), Epidemiology
Rollins School of Public Health
Emory University
- 2022 Bachelor of Science (B.S.), Biology, *cum laude*
University of West Georgia

PROFESSIONAL AND ACADEMIC ASSOCIATIONS

- 2020–2022 Tri Beta National Biological Honor Society (Chapter President and member)

SELECTED PROFESSIONAL AND ACADEMIC EXPERIENCE

Graduate Research Scientist

As a Graduate Research Assistant in Exposomics, conducted an analysis involving three cohorts from East Asia (a total of 436 individuals), examining associations between signatures of PCBs (polychlorinated biphenyls) and OCPs (organochlorine pesticides), and their influence on B-cell activating markers (soluble CD27 and CD30) that predict the risk of non-Hodgkin lymphoma. Cleaned, manipulated, and analyzed complex datasets with a wide array of chemical variables. Employed R software to integrate and organize study data, examine population characteristics, perform correlation analyses, visualize chemical relationships, and conduct linear regression analyses for single exposure-outcome models. Applied Bayesian Kernel Machine Regression (BKMR) in R to estimate the mixture effect of PCBs and OCPs on sCD markers.

Environmental and Community Health Researcher

Conducted community-based participatory research with Sivuqaq tribal communities and academic partners on St. Lawrence Island (Sivuqaq) as part of “Restoring Northeast Cape for the Health and Well-Being of the Yupik Communities of St. Lawrence Island, Alaska,” a National Institute of Environmental Health Sciences (NIEHS)-funded project. Collected biological samples from some 170 Sivuqaq natives for biomonitoring of PFAS and flame-retardant chemicals originating from former military sites. Developed a framework for a community-based cancer registry to capture precise rates of cancer morbidity and mortality in Sivuqaq tribal communities. Led project development for a cumulative exposure survey, creating two detailed questionnaires to address direct and indirect chemical exposures in two villages. Authored a comprehensive report analyzing methods and findings of a prior risk assessment on St. Lawrence.

Epidemiology Intern: Contact Tracer – Coronavirus Response

Tracked incidence and prevalence of COVID-19 infection as a contact tracer in a public health department, reporting patient information, symptoms, and exposure data through the MTX software program. Employed the SENDSS software program to complete data entry for COVID-19 patients. Performed outreach to provide patients and close contacts with information regarding testing facilities, and CDC isolation and quarantine guidelines.

MANUSCRIPTS

Massingill R. 2024. Predictors of emerging per- and poly-fluoroalkyl substances (PFAS) exposure in serum of U.S. adults [Master's thesis, Emory University, Rollins School of Public Health]. Emory Theses and Dissertations; <https://etd.library.emory.edu/concern/etds/h128ng42k?locale=en>

PRESENTATIONS

Massingill R. Predictors of emerging per- and poly-fluoroalkyl substances (PFAS) in serum of U.S. adults. Poster presented at Emory University, Rollins School of Public Health. May 1, 2024. Atlanta, GA.

SKILLS

Proficient in the use of SAS and R software to integrate and organize complex datasets, perform statistical analyses, and create data visuals (matrices, tables, and forest plots).

Experienced in Geographic Information Systems programming in R and ArcGIS.

Skilled in identifying potential confounders and effect modifiers.

Experienced in applying bias analysis methods to resolve measurement errors.

Skilled in various laboratory techniques, including biochemical and PCR testing.