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(he/him)

William M. Longo, Ph.D.

Senior Environmental Chemist

Dr. Longo is an environmental chemist with a broad background in the earth and environmental sciences. He specializes in analyzing and interpreting chemical signatures in the environment and evaluating the analytical methods that underpin these data. At Gradient, Dr. Longo uses his expertise in analytical chemistry to evaluate data quality and usability for a range of organic compounds and sample types. He applies his skills in environmental science and fate and transport to identify sources and interpret distributions and concentrations of organic compounds in groundwater and other natural and artificial systems. Before joining Gradient, Dr. Longo taught courses in environmental sciences at Macalester College, and he tested and optimized new sorption-based PFAS remediation technologies as a part of his postdoctoral work at the University of Minnesota. Additionally, Dr. Longo conducted doctoral and postdoctoral work at Brown University and the Woods Hole Oceanographic Institution, focusing on the measurement and interpretation of organic compounds in sediment cores to infer past climate and environmental changes. He developed analytical methods, led fieldwork in northern Alaska, and participated in a sediment coring expedition to the south Pacific Ocean in support of these efforts.

Areas of Expertise

- Analytical Chemistry
- Data Quality & Usability
- Contaminant Fate & Transport
- Environmental Forensics
- Per- & Polyfluoroalkyl Substances (PFAS)
- Organic Geochemistry
- Climate Science

Education

- Ph.D., Earth, Environmental, and Planetary Sciences, Brown University
- Sc.M., Geological Sciences, Brown University
- B.Sc., Chemistry, Haverford College

Selected Projects

Data Quality and Usability Evaluation: Evaluated petroleum hydrocarbon data quality, data usability, and analytical methods for drinking water system samples impacted by a jet fuel release. Managed multiple related projects and assisted in the preparation of an expert report.

Literature Review: Completed a literature review on biosolids regulations and practices as part of natural resources damages litigation. Managed the assessment of impacted sites and evaluation of potential sources of PFAS and co-contaminants.

Environmental Forensic Analysis: Evaluated data quality and provided environmental forensic analysis for a case involving PFAS contamination of drinking water sources potentially due to land application of industrial biosolids. Acted as project manager, overseeing data quality review of industrial wastewater, a watershed-scale comprehensive PFAS source search, and a literature review of PFAS fingerprints in textiles and textile manufacturing.

PFAS Exposure Assessment: Interpreted blood and plasma PFAS data from residents of a northeastern state living in the vicinity of multiple potential PFAS sources.

Groundwater PFAS Analysis: Assisted in the preparation of a quality assurance project plan (QAPP) for groundwater PFAS sampling for a potentially responsible party (PRP) group at a Superfund site.

Data Validation: Observed PFAS stack testing at a municipal solid waste incinerator and performed data validation for subsequent results.

Selected Publications and Presentations

Longo, WM; Sinha, S; Imagawa, M; Arnold, WA; Hatton, J; Pennell, KD; Simcik, MF. 2025. "*In situ* sequestration of per- and polyfluoroalkyl substances in aquifer materials using polydiallyldimethyl ammonium chloride-stabilized powdered activated carbon." *Environ. Sci.: Water Res. Technol.* 6(11): 1527-1541. doi.org: 10.1039/D4EW00752B.

Longo, WM; Flewelling, SA; Tang, T; Hebert, RM; Peery, MM. 2024. "Reduced Uncertainty in Solid-Water Distribution Coefficients for Per- and Polyfluoroalkyl Substances Through Exclusion of Non-equilibrium and Unsaturated Conditions." Abstract/Poster #: 4.14.P-Tu-151. Presented at the SETAC North America 45th Annual Meeting, Fort Worth, TX, October 20-24.

Longo, WM. 2021. "Bench-scale Evaluation of *In Situ* PFAS Sequestration from Groundwater." Presented at the Minnesota Water Resources Conference, virtual, October 19-21.

Longo, WM; Huang, Y; Russell, JM; Morrill, C; Daniels, WC; Giblin, AE; Crowther, J. 2020. "Insolation and greenhouse gases drove Holocene winter and spring warming in Arctic Alaska." *Quat. Sci. Rev.* 242:106438.