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## Tatiana D. Manidis, M.E.M.

### Senior Environmental Scientist

Ms. Manidis is a senior environmental scientist specializing in the assessment of human health and ecological effects of chemical exposures. At Gradient, her primary responsibilities include supporting scientific state-of-knowledge assessments, safety assessments of consumer products, and toxicological risk assessments (TRAs) of extractables and leachables from medical devices. Ms. Manidis has experience with toxicological research, data management, and data analysis. She has also conducted natural resource damage assessments for Fortune 500 companies. Ms. Manidis earned her master's degree, specializing in ecotoxicology and environmental health, at the Nicholas School of the Environment at Duke University, where she evaluated the association of mercury exposure with blood pressure among adults near artisanal and small-scale gold mining in Madre de Dios, Peru. Prior to joining Gradient, she conducted a large-scale literature review and performed a dose-response meta-analysis of colorectal cancer risk and nitrate in drinking water for a large nonprofit.

### Areas of Expertise

- Human Health & Ecological Risk Assessment
- Epidemiology
- Toxicological Risk Assessment (TRA) of Extractables & Leachables
- Data Management & Analysis
- Literature Review

### Education

- M.E.M., Ecotoxicology and Environmental Health, Duke University
- B.S., Environmental Studies, Wofford College

### Selected Projects

**Endocrine Disruption Evaluation:** Developed and implemented a methodology to compile information regarding the endocrine disruption potential of a large portfolio of petroleum substances, following proposed European Union (EU) guidance. Evaluated the compiled information using a heat map approach to provide a preliminary indication of the endocrine disruption potential among the substances and assign preliminary priorities. Identified key uncertainties and data gaps.

**Scientific State of Knowledge:** Developed a historical timeline of the scientific fields of ecotoxicology and bioaccumulation, and documented the growth in the scientific knowledge of ecotoxicity and bioaccumulation PFAS on the basis of a review of the scientific literature, public disclosures, and technical reports. Described the basis for and the development of PFAS ecological water quality criteria.

**Toxicological Risk Assessment (TRA) of Extractables and Leachables:** Conducted ISO compliant TRAs for chemicals identified in extracts of different catheter systems. In accordance with ISO 10993-17 and US FDA guidance, identified toxicological data for relevant endpoints and used these data to derive chemical- and device-specific safety margins.

**Toxicological Data Evaluation:** Compiled toxicological data to evaluate carcinogenicity and mutagenicity of chemicals of concern for Chemical Hazard Assessments per the Globally Harmonized System of Classification and Labelling (GHS) and the Cradle to Cradle Material Health Methodology.

**Nitrate Exposure Evaluation:** Reviewed medical records, depositions, and legal documents to identify potential health effects. Evaluated scientific literature to identify potential health effects related to nitrate exposure from poultry farm operations.

**Air Pollution Literature Review:** Reviewed scientific literature on health effects associated with air pollution. Evaluated morbidity and mortality rates across multiple geographic locations. Performed critical review of expert reports.

**Exposure Variability Evaluation:** Conducted data analysis and data visualization to evaluate exposure variability of community members to metals in soil.

### Selected Publications

Boomhower, SR; Long, CM; Li, W; **Manidis, TD**; Bhatia, A; Goodman, JE. 2021. "A review and analysis of personal and ambient PM<sub>2.5</sub> measurements: Implications for epidemiology studies." *Environ. Res.* 204:112019. doi.org/10.1016/j.envres.2021.112019.

Temkin, A; Evans, S; **Manidis, T**; Campbell, C; Naidenko, OV. 2019. "Exposure-based assessment and economic valuation of adverse birth outcomes and cancer risk due to nitrate in United States drinking water." *Environ. Res.* 176:108442. doi: 10.1016/j.envres.2019.04.009.