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Areas of Expertise

- Molecular Biology & Toxicology
- DNA Damage, Repair & Mutagenesis
- Mode-of-Action Analyses
- Carcinogenesis
- Risk Assessment
- Human Exposure
- Weight of Evidence

Services

- Toxicology & Risk Sciences
- Exposure & Risk Assessment
- Occupational Health & Safety
- Toxic Substance Control Act (TSCA)
- Product Safety Assessment

Education

- Ph.D., Biochemistry, Massachusetts Institute of Technology
- B.A., Chemistry, Skidmore College

Lisa A. Bailey, Ph.D.

Principal

Dr. Bailey is a principal at Gradient with more than 20 years of professional experience in toxicology and human health risk assessment, including occupational exposures and risks. She has led many human health risk assessment projects that involved developing methodology and conducting weight-of-evidence evaluations for complex toxicology, epidemiology, and mechanistic datasets, in addition to regulatory public comment and public risk communication. Dr. Bailey has also led several projects related to regulatory comment and risk evaluation under the amended Toxic Substances Control Act (TSCA).

Before joining Gradient in 2006, Dr. Bailey was a senior scientist at an environmental consulting firm, where she led many human health risk assessment projects under the Massachusetts Contingency Plan (MCP), other state agencies, and the US EPA's Superfund Program, working with industrial, utility, and government clients. Prior to consulting, Dr. Bailey was a postdoctoral fellow at the Harvard School of Public Health, where she focused on oxidative DNA damage, repair, and mutagenesis. Dr. Bailey was a predoctoral student at the Massachusetts Institute of Technology, and she has authored several peer-reviewed articles and book chapters in the field of human health risk.

Selected Projects

Toxic Substances Control Act (TSCA): For several industrial clients, provided toxicology and risk assessment support related to US EPA's proposed rulemaking under the new TSCA (for TCE, PCE, carbon tetrachloride, methylene chloride, and asbestos), in addition to risk management support (e.g., interpret risk evaluation results; derive occupational exposure limits; strategize next steps; interact with US EPA) as US EPA began the risk management process for several existing chemicals.

Tri- and Tetrachloroethylene Toxicological Data Analysis: Performed an in-depth analysis of tri- and tetrachloroethylene toxicology and mechanistic data to evaluate whether the weight of evidence supports the plausibility of tri- and tetrachloroethylene as human renal carcinogens.

Occupational Exposure Level Determination: Performed an in-depth analysis of manganese toxicology and occupational epidemiology and proposed an occupational exposure level for manganese in welding fumes.

Inhalation Toxicity Assessment: For several industrial clients, reviewed the current status of manganese inhalation toxicity criteria (i.e., RfC, ACGIH TLV) and current manganese inhalation toxicity literature in support of regulatory comment/communication and public communication regarding potential health effects from both occupational and residential exposure to manganese in the air.

Naphthalene Toxicological Data Analysis: Performed an in-depth analysis of naphthalene toxicology and mechanistic data to evaluate whether the weight of evidence supports the plausibility of naphthalene as a human carcinogen.

Formaldehyde Toxicological Data Analysis: Performed an in-depth analysis of formaldehyde toxicology and mechanistic data to evaluate whether the weight of evidence supports the plausibility of formaldehyde as a human leukemogen.

Selected Publications

Bailey, LA; Kerper, LE; Goodman, JE. 2017. "Derivation of an occupational exposure level for manganese in welding fumes." *Neurotoxicology*. 64:166-176.

Bailey, LA; Nascarella, M; Kerper, LE; Rhomberg, LR. 2015. "Hypothesis-based weight-of-evidence evaluation and risk assessment for naphthalene carcinogenesis." *Crit. Rev. Toxicol.* 46 (1):1-42.

Rhomberg, LR; **Bailey, LA;** Goodman, JE; Hamade, AK; Mayfield, D. 2011. "Is exposure to formaldehyde in air causally associated with leukemia? A hypothesis-based weight-of-evidence analysis." *Crit. Rev. Toxicol.* 41(7):555-621.

Bailey, LA; Goodman, JE; Beck BD. 2009. "Proposal for a revised Reference Concentration (RfC) for manganese based on recent epidemiological studies." *Regul. Toxicol. Pharmacol.* 55:330-339.