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## Areas of Expertise

- Toxicology
- Causation Analysis
- Product Safety
- Microplastics
- Chlorinated Solvents

## Services

- Toxicology & Risk Sciences
- Occupational Health & Safety
- Product Safety Assessment

## Education

- Ph.D., Environmental Toxicology, University of Washington
- B.S., Biology, Duke University
- Diplomate of the American Board of Toxicology

## Andrew Yeh, Ph.D., DABT

### Senior Toxicologist

Dr. Yeh is an expert in environmental toxicology and chemical risk assessment. He critically evaluates toxicological, epidemiological, and mechanistic data in support of causation analyses in a variety of litigation matters and human health and ecological risk assessment projects. He also conducts chemical risk assessments as part of safety evaluations of consumer products and medical devices. Before joining Gradient, Dr. Yeh was a senior fellow in the Department of Radiology at the University of Washington (UW) School of Medicine. He earned a Ph.D. in environmental toxicology at UW, where he examined metabolic effects associated with exposure to contaminants of emerging concern (e.g., in pharmaceuticals and personal care products) in the contexts of both ecotoxicity and seafood safety. He is Secretary-Treasurer of the Pacific Northwest Association of Toxicologists, a member of the Chemical and Petroleum Planning Committee of the Washington Governor's Industrial Safety and Health Advisory Board, and a member of the Microplastics Consumer Messaging Workgroup of the California Water Quality Monitoring Council Microplastics Subcommittee. He serves on the steering committee of the Society of Environmental Toxicology and Chemistry Microplastics Interest Group and assisted the Southern California Coastal Water Research Project (SCCWRP) to update the Toxicity of Microplastics Explorer (ToMEx) database of mammalian and aquatic toxicity studies.

### Selected Projects

**Literature Review:** Conducted a literature review to evaluate the state of science on microplastics associated with metal cans, containers, and packaging.

**Human and Environmental Risk Assessment:** Conducted a literature review and data gap analysis to evaluate the state of science on microplastics generated by paints and coatings.

**Health Effects Evaluation:** Conducted a literature review to compare studies of the toxicity of natural fibers relative to synthetic fibers, including with respect to work-related respiratory symptoms.

**Alternatives Assessment (AA):** Evaluated toxicological properties of potential alternatives for an antiozonant chemical (6PPD) in vehicle tires. The AA was conducted under California's Safer Consumer Products (SCP) regulations.

**Cancer and Non-Cancer Risks of Chlorinated Solvents:** Evaluated the risk of cancer and non-cancer effects associated with occupational exposure to perchloroethylene and trichloroethylene.

**Human Health Risk Assessment:** Evaluated the association of occupational exposures to heptane, methanol, propanol, butanol, silica, formaldehyde, and other substances, with risk of a health outcome.

**Environmental Risk Assessment:** Generated a database of over 1,000 chemicals present in vehicle fluids or tires along with acute toxicity data in Puget Sound salmon in an assessment to identify

### Selected Publications

**Yeh, A.** 2024. "Potential health effects of plastic additives." *Gradient Trends*, 90, Spring.

**Yeh, A;** Bamgbose, I. 2022. "Potential impacts of microplastics on humans and wildlife." *Gradient Trends* 83:5,8, Winter.

**Yeh, A;** Meador, JP; Lunsman, TD; Mayfield, DB; Verslycke, TA. 2021. "Metabolic effects of pharmaceuticals in fish." In *Pharmaceuticals in Marine and Coastal Environments: Occurrence, Effects and Challenges in a Changing World, Volume 1 of the Estuarine and Coastal Sciences Series* (Eds.: Durán-Álvarez JC; Jiménez-Cisneros B), Elsevier Ltd., Kidlington, UK.

Meador, JP; **Yeh, A;** Gallagher, EP. 2018. "Adverse metabolic effects in fish exposed to contaminants of emerging concern in the field and laboratory." *Env. Pollut.* 236:850-861.

**Yeh, A;** Marcinek, DJ; Meador, JP; Gallagher, EP. 2017. "Effect of contaminants of emerging concern on liver mitochondrial function in Chinook salmon." *Aquat. Tox.* 190:21-31.