Andrew Yeh, Ph.D.

Senior Toxicologist

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Dr. Yeh is an expert in general, molecular, and environmental toxicology. Dr. Yeh critically evaluates toxicological, epidemiological, and mechanistic data in support of causation analyses in litigation and human health 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 (for example, in pharmaceuticals and personal care products) in the contexts of both ecotoxicity and seafood safety.

Representative Projects

Causation Analysis: Evaluated the risk of cancer and non-cancer effects associated with occupational exposure to perchloroethylene and trichloroethylene.

Causation Analysis: Evaluated the risk of multiple cancer types associated with occupational exposure to diesel exhaust and other substances (*e.g.*, asbestos, benzene, creosote, and herbicides).

Human Health Risk Assessment: Conducted a quantitative risk assessment that concluded that a mandated safety test of a children's toy altered the product's chemical structure which lead to unrealistic estimates of health risks to children from exposure to boron.

Product Stewardship: Reviewed and summarized the human and ecological health hazards of four-membered lactones and their hydrolysis products. The hazard identification analyses involved using quantitative structure-activity relationship software.

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 chemicals that may be associated with a salmon mortality syndrome.

Chemical Product Evaluation: Provides ongoing support to a city chemical reduction program by evaluating the hazard to human and ecological receptors, and exposure potential (*e.g.*, persistence and bioaccumulation properties), of numerous pesticide and herbicide products. The evaluations are used to identify and prioritize products for the city's chemical reduction program.

Areas of Expertise

- Toxicology
- Causation Analysis
- Product Safety
- Risk Assessment
- Risk Communication

Education

Ph.D., Environmental Toxicology, University of Washington

B.S., Biology, Duke University

Selected Publications

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. Pollution* 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." *Aquatic Tox.* 190:21-31.

Meador, JP; **Yeh, A;** Young, G; Gallagher, EP. 2016. "Contaminants of emerging concern in a large temperate estuary." *Env. Pollution* 213:254-267.

Yeh, A; Kruse, SE; Marcinek, DJ; Gallagher, EP. 2015. "Effect of omega-3 fatty acid oxidation products on the cellular and mitochondrial toxicity of BDE 47." *Tox. In Vitro.* 29(4):672-680.