

Robyn Prueitt, Ph.D., DABT

Senior Toxicologist

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Dr. Prueitt is an expert in human genetics, carcinogenesis, and molecular toxicology. At Gradient, her primary responsibilities include evaluating toxicology and epidemiology data for regulatory comment, human health risk assessment, and litigation projects.

Before joining Gradient, Dr. Prueitt worked as a research scientist at the Fred Hutchinson Cancer Research Center, where she designed and interpreted multi-species proteomic studies related to tumor biology and biomarker discovery. As a postdoctoral fellow at the National Cancer Institute's Laboratory of Human Carcinogenesis, Dr. Prueitt performed genomic and molecular epidemiologic studies of human cancer risk and progression. As a pre-doctoral student, she investigated genetic causes of human diseases using various molecular genetic techniques. Dr. Prueitt has authored many peer-reviewed articles in the fields of genetics, carcinogenesis, and toxicology.

Representative Projects

Cytotoxicity Evaluation: Evaluated the potential cytotoxicity of a medical device by critically reviewing the experimental data and human clinical studies for the device and its components.

Carcinogenicity Assessment: Evaluated whether the weight of epidemiology, animal toxicity, mechanistic, and pharmacokinetic evidence indicates that toluene diisocyanate is a human carcinogen. This analysis used Gradient's hypothesis-based weight-of-evidence approach and was published in a peer-reviewed journal.

Review of Toxicogenomics: Critically reviewed global gene expression profiling data for a population exposed to benzene and determined whether the expression profile could be used as a biomarker of benzene toxicity in a broader population, particularly without proof of benzene exposure from a specific source.

Risk Evaluation: Evaluated the potential lung cancer risk from exposure to asbestos during vehicle brake repair and considered the association between cigarette smoking and lung cancer in comparison to that expected from asbestos exposure.

Weight-of-Evidence Analysis: Used Gradient's hypothesis-based weight-of-evidence approach to assess whether the epidemiology, toxicology, and mechanistic evidence supports chlorpyrifos being a neurobehavioral toxicant in humans at relatively low exposure levels. This work was published in a peer-reviewed journal.

Bioavailability Assessment: Assessed whether animal, mechanistic, and epidemiological data are consistent with the nickel ion bioavailability model, which asserts that the carcinogenicity of nickel-containing substances is based on the bioavailability of the nickel ion at nuclear sites of target respiratory epithelial cells. This analysis was published in a peer-reviewed journal.

Regulatory Comment: Provided written and oral comments on several occasions to US EPA on clinical and epidemiology studies and their bearing on US EPA's National Ambient Air Quality Standards (NAAQS) for ozone.

Areas of Expertise

- Toxicology
- General and Molecular Biology
- Human Genetics
- Molecular Epidemiology
- Carcinogenesis
- Mode-of-Action Analyses

Education

Ph.D., Cell and Molecular Biology/Human Genetics, University of Texas Southwestern Medical Center at Dallas

B.S., Biology, Pacific Lutheran University

Diplomate, American Board of Toxicology

Selected Publications

Prueitt, RL; Goodman, JE. 2016. "Evaluation of neural reflex activation as a mode of action for the acute respiratory effects of ozone." *Inhal. Toxicol.* 28(11):484-499.

Prueitt, RL; Cohen, JM; Goodman, JE. 2015. "Evaluation of atherosclerosis as a potential mode of action for cardiovascular effects of particulate matter." *Regul. Toxicol. Pharmacol.* 73(Suppl. 2):S1-S15.

Prueitt, RL; Rhomberg, LR; Goodman, JE. 2013. "Hypothesis-based weight-of-evidence evaluation of the human carcinogenicity of toluene diisocyanate." *Crit. Rev. Toxicol.* 43(5):391-435.

Prueitt, RL; Goodman, JE; Bailey, LA; Rhomberg, LR. 2011. "Hypothesis-based weight-of-evidence evaluation of the neurodevelopmental effects of chlorpyrifos." *Crit. Rev. Toxicol.* 42(10):822-903.

Prueitt, RL; Goodman, JE; Valberg, PA. 2009. "Radionuclides in cigarettes may lead to carcinogenesis via p16(INK4a) inactivation." *J. Environ. Radioact.* 100(2):157-161.



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