

# Kelli R. Hackney

Scientist

# **Professional Profile**

# Fields of Expertise

Kelli R. Hackney is an environmental scientist at Intertox whose work primarily focuses on providing industry and litigation support related to exposures to odors and chemicals in the air. Ms. Hackney's interest in assessing odor impacts, combined with her skills in data analysis and risk communication, has benefited industries such as waste disposal and treatment, cannabis, and aviation. She aims to expand the application of odor impact assessments into new industries to safeguard individuals, communities, and businesses from the impacts of odors.

In addition to her work on odor assessments, Ms. Hackney has experience conducting human and ecological risk assessments across various exposure pathways, including air, water, food, and soil. She has contributed to projects such as researching the ecological effects of DDT and its breakdown products in the Southern California Bight and has authored technical documents for private and public agencies including the Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, and Willamette River Keepers.

# Education

B.S., Portland State University, 2021, Environmental Science

#### Accolades and Certifications

Graduated Summa Cum Laude, Portland State University OSHA 40-hour HAZWOPER

#### **Current and Previous Positions**

Staff Scientist II, Intertox, Inc., Seattle, WA (2023-present).

Staff Scientist I, Intertox, Inc., Seattle, WA (2022-2023).

Research Scientist, Chartrand Env., Seattle, WA (2021-2022).

**TMDL Water Quality Analyst Intern**, Oregon Department of Environmental Quality, Portland, OR (2020-2021).

# **Selected Project Experience**

• Conducted odor impact assessments for odorous facilities such as landfills and wastewater treatment plants. Designed sampling and

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analysis plans for identifying and measuring odorous air constituents detected in surrounding communities. Analyzed analytical data to evaluate potential physiological health impacts due to chemosensory stimulation of odorous air constituents on residents. Provided guidance to facilities to identify metrics for minimizing impact to residents and prioritize reductions of the chemical odorants with the highest potential to cause physiological health impacts. Ongoing (2023–current).

- Utilized pharmacokinetic modelling to predict blood concentrations of ethanol to characterize changes in blood concentrations over time based on assumptions about input and excretion for individuals. Compared the estimated blood concentrations at time of an incident with effects, such as behavioral impairment, that are associated with specific blood alcohol levels. Ongoing (2023–current).
- Estimated screening-level exposures and human health risks from consuming vegetables (carrots and kale) watered with reused water and Sammamish River water with detected concentrations of approximately compounds of emerging concern (e.g., PFAS, pharmaceuticals). Developed technical report of findings to inform decision-making and consumers. Completed (2023).
- Provided expertise and toxicological assistance related to disinfection byproducts (DBPs) to provide technical support to an international non-profit, scientific, and education association as the US Environmental Protection Agency (US EPA) National Drinking Water Advisory Committee (NDWAC) Working Group works to revise the Microbial and DBP rules. Completed (2023).
- Provided technical support and expertise for the review and development of sampling and analysis plans to investigate the toxicological impacts of pesticides, PCBs, and heavy metals in sediments in the San Diego Bay. Ongoing (2022–current).
- Provided technical support and assessed toxicological and physiological impacts of fragrances on customers and employees prior to application in indoor spaces such as aircraft cabins, lounges, and bathrooms. Completed (2022–2023).
- Assisted in conducting toxicological assessments to characterize the probability of adverse human health effects from potential exposures to chemical contaminants in aircraft cabin air, including from jet engine oils, hydraulic fluids, fuels, and other sources, including tricresyl phosphate isomers, tributyl phosphate, and other by-products of combustion. Ongoing (2022–present).
- Developed guidance and training materials for assessing toxicity and determining safe occupational exposure levels to advanced materials and nanomaterials. Completed (2022).
- Assessed potential exposures to residents associated with the Cedar Hills Regional Landfill (CHRLF) related to air, odor, noise (acoustics), vibration, groundwater, surface water, stormwater, pest management



issues, and other related issues for the human health risk assessment (HHRA) portion of the CHRLF Environmental Impact Statement (EIS). Completed (2022).

- Conducted a review of historical and current water quality, sediment, and fish tissue data for the Southern California Bight to assess the ecological effects of deepwater ocean dumping of DDT Wastes. Coauthored a white paper available for public distribution. Completed (2022).
- Developed a technical report applying the framework for using EPA's Causal Analysis/Diagnosis Decision Information System (CADDIS) to a case study of a biologically impaired watershed in the Oregon Coastal Range for Oregon DEQ as a TMDL Water Quality Analyst Intern. This report is being used by Oregon DEQ for discussions about harmful algal bloom causes in addition to continuing to work on causes of biocriteria impairments. This project also included developing conceptual models, decision trees, and a presentation to Oregon DEQ's Watershed Management Section. Completed (2021).

#### **Publications and Reports**

Chartrand, A., **Hackney, K**., Valentine, D., Stack, M., Cossaboon, J., Dodder, N., Hoh, E., Damien, P., Kessouri, F., and McWilliams, J. 2022. Research on Continuing Ecological Effects of Deepwater Ocean Dumping of DDT Wastes in the Southern California Bight. Prep. For Tides and Save our Coast Foundations, June 2022. 111 pp.

Chartrand, A, **Hackney, K**., and Corey, L. 2022. Health risk assessment for Cedar Hills Regional Landfill to support the Final Environmental Impact Statement for Facility Expansion. Prep. For King County Solid Waste Division, Seattle WA. Feb. 2022. 600 pp.

**Hackney, K.,** Keo-Williams, B., Mrogenski, M., & Szafranski, G. 2021. Oregon Coast Sunflower Sea Star (*Pycnopodia helianthoides*) Population Recovery Action Plan. Prep. for Oregon Department of Fish and Wildlife. March 2021.

**Hackney, K**. 2021. Overview of EPA's Causal Analysis/Diagnosis Decision Information System (CADDIS): How to Use It and A Case Study in the Upper Salmon River Watershed. Prep. for Oregon Department of Environmental Quality. March 2021.

#### **Selected Presentations**

**Hackney, K.**, O'Neill, H.C., Bruce, G.M., and Pleus, R.C. Defining new methods for evaluating impacts of odors through chemosensory irritation. Presented to Air & Waste Management Association's Air Quality Measurement Methods and Technology Conference, Aurora, CO. April 2025.

Pleus, R.C., **Hackney, K.**, and Bruce, G.M. Obtaining Key Medical Information Regarding the Health Impacts of Chemicals in the Cabin



Air of Commercial Aircraft. Presented to Aerospace Medical Association 94<sup>th</sup> Annual Scientific Meeting, Chicago, IL. May 2024.

**Hackney, K**. Ongoing investigations concerning the reproductive effects of DDE in coastal California condors. Presented to California Coastal Chloro-Contamination Conference at Univ. of California Santa Barbara in Santa Barbara, CA. May 2022.

Chartrand, A., and **Hackney, K**. DDT wastes dumped into deepwater basins of southern California: 21st Century implications. Presentation to Society of Toxicology and Chemistry, Portland, OR, 15 Nov. 2021.

Chartrand, A., and **Hackney, K**. DDT wastes dumped into deepwater basins of southern California: 21st Century implications. Western Washington University Toxicology Program, 6 Jan. 2022.

Brannon, K., & **Hackney, K**. CADDIS Application at DEQ. Presentation to Watershed Management Section, Oregon Department of Environmental Quality. Feb. 2021.