

Department of Environmental and Occupational Health

Verónica Vieira, Department Chair

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The Department of Environmental and Occupational Health (DEOH) focuses on integrative and transdisciplinary health research across the fields of exposure science, toxicology, risk assessment, epidemiology, urban health, climate change, natural disasters, environmental health disparity, occupational medicine, and related disciplines, using the three pillars of science: basic, clinical, and population science. Research with emphases on assessing exposures to and health risks from environmental and occupational factors include, but are not limited to contaminants in ambient air, water, food, and soil; green space and the built environment; radiation; noise; meteorology; work organization; and community and workplace stressors. The multidisciplinary expertise of the faculty, students, and staff provides the department with the capability to address complex local, regional, and global environmental problems and to provide training in five critical areas, as described below.

- Toxicological research investigates molecular, cellular, and physiological endpoints, to reveal how exposures to toxic pollutants and other environmental factors affect the body and investigates biological mechanisms for the development and exacerbation of diseases that might have an environmental etiology.
- Exposure science research addresses questions such as: What concentrations of toxicants are present in air, water, food, and soil, and what levels are present for other exposure sources such as noise and radiation? What sub-populations, activities, and circumstances are associated with exposures that can adversely impact health, or with exposures that can improve health? What are the relationships between exposure to one or multiple environmental agents (e.g., chemical toxicants, physical agents, biological agents), resulting organ and tissue concentrations, and the biologically relevant dose a person receives?
- Epidemiologic studies elucidate the connections between environmental and occupational exposures and resulting health outcomes, including disease and death among susceptible populations, sub-clinical health conditions, and health-related behaviors such as physical activity.
- Risk analyses integrate toxicological and epidemiologic findings to manage risks and contribute to sound environmental and occupational health policies that improve population health.
- Environmental justice studies focus on reducing exposure to environmental hazards and promoting equitable environmental health through community-based participatory research and practice.

DEOH offers an M.S. and Ph.D. in Environmental Health Sciences. The Ph.D. includes two tracks: Environmental Toxicology, and Exposure Sciences and Environmental Epidemiology. Faculty contribute directly to the M.P.H. emphasis in Environmental Health and the B.S. in Public Health Sciences.

- Environmental Health Sciences, M.S.
- Environmental Health Sciences, Ph.D.