

Department of Environmental and Occupational Health

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The Department of Environmental and Occupational Health (DEOH) focuses on integrative and transdisciplinary health research across the fields of toxicology, exposure science, risk assessment, environmental and occupational epidemiology, climate change and natural disasters, injury and violence prevention, 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 air, water, food, and soil; neighborhood environment; radiation; noise; climate-sensitive exposures; work organization; community and workplace stressors; and social 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 exposures are experienced by individuals and populations through multiple exposure pathways including inhalation, ingestion, and dermal absorption, and what exposures are experienced for other exposure sources such as noise, radiation, and climate? What sub-populations, activities, social stressors, and other 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 burdens, 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, health-related behaviors such as physical activity, and factors that may modify or mediate the exposure and outcome associations.
- Risk analyses integrate toxicological and epidemiological 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/occupational hazards and promoting equitable environmental/occupational 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 Environmental Epidemiology. Faculty contribute directly to the M.P.H. concentration in Environmental and Occupational Health and the B.S. in Public Health Sciences.

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