

EHS

ENVIRONMENTAL HEALTH SCIENCES

Environmental Health Sciences (EHS) includes a wide spectrum of disciplines that comprise this fast-moving field, with the aim of ultimately improving the quality of human health and the environments in which we live and work, both in the U.S. and globally. EHS is on the forefront of promoting multidisciplinary and integrated approaches to research and training in the field. Internationally renowned faculty work with trainees to pursue cutting-edge work in areas that combine our traditional strengths in exposure science, toxicology, human nutrition, and global and molecular environmental epidemiology. At the University of Michigan School of Public Health, you will gain expertise to face the environmental challenges of the future.

CAREER OPPORTUNITIES

SPH graduates in environmental health are prepared to fill the demand for professionals in many different areas, including:

- Industry (particularly the manufacturing, chemical, health care, pharmaceutical, and energy industries)
- Universities, colleges, and other educational institutions
- U.S. and international agencies, such as the Centers for Disease Control and Prevention (CDC), the National Institute for Occupational Safety and Health (NIOSH), the National Institute for Environmental Health Sciences (NIEHS), the Food and Drug Administration (FDA), and the World Health Organization (WHO)
- State and county health departments
- Not-for-profit organizations, such as the National Sanitation Foundation–International
- Consulting and research firms
- Nongovernmental organizations, such as the Natural Resources Defense Council and the Environmental Defense Fund

The job titles of recent graduates have included:

- Assistant professor
- Industrial hygienist
- Environmental scientist
- Nutrition specialist
- Environmental health officer
- Toxicologist

RESIDENTIAL DEGREES OFFERED

- *Master of Public Health (MPH)*
General, or specialties in Environmental Quality and Health; Industrial Hygiene; Hazardous Substances Management; Human Nutrition (Dietetics); Occupational and Environmental Epidemiology; Risk Science and Toxicology

This program can be part of a dual degree program involving other units at the University of Michigan (e.g., Medicine, Natural Resources, Engineering, etc.)

- *Master of Science (MS)*
Graduates have careers in research in an area of specialization
- *Doctor of Philosophy (PhD)*
Graduates have leadership careers in academia, government, industry, and other venues

www.sph.umich.edu/ehs

CONTACT INFORMATION

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SPH environmental health scientists are conducting global studies of air quality.

“MY ENVIRONMENTAL HEALTH SCIENCE EDUCATION ALLOWED ME TO CHOOSE FROM A VARIETY OF INTERESTING CAREER CHOICES—AND HELPED ME DETERMINE HOW TO APPROACH AND SUCCEED IN MY CAREER.”

—REBECCA HEAD, PHD '83

FACULTY AND RESEARCH

KWANGSEOG (KWAN) AHN, SCD, CIH, *Lecturer* ■ Ventilation, indoor air quality, sustainability and occupational health, exposure assessment and controls for airborne hazards, internationally common environmental and occupational health issues

NILADRI BASU, PHD, *Assistant Professor* ■ Ecotoxicology, fish and wildlife sentinels, neurochemical biomarkers, ecosystem health, water quality, and risk assessment of legacy and emerging pollutants

STUART BATTERMAN, PHD, *Professor; Joint Appointment: Professor, Civil and Environmental Engineering* ■ Exposure assessment, biological monitoring, human health risk and environmental impact assessment, innovative measurement techniques for air pollutants, environmental policy (air quality, hazardous waste, and drinking water)

SUZANNE COLE, PHD, *Lecturer* ■ Dietary assessment, genetic analysis of health-related complex traits, role of lifestyle factors in the development of Type 2 diabetes among adolescents

RACHEL DAVIS, PHD *Research Assistant Professor* ■ Design and evaluation of individually tailored dietary interventions, methodological issues in health surveys, role of cultural factors in health communications

DANA DOLINOY, PHD, *Assistant Professor* ■ Environmental epigenetics/epigenomics, developmental origins of adult disease, role of diet and nutrition in modulating chemical exposure and epigenetic events including DNA methylation and chromatin structure

J. TIMOTHY DVONCH, PHD, *Research Assistant Professor* ■ Exposure assessment and health effects of air pollution, with a focus on chemical composition of airborne particles and air pollution source identification

ALFRED FRANZBLAU, MD, *Professor; Joint Appointment: Associate Professor, Emergency Medicine* ■ Work-related musculoskeletal disorders, biological monitoring of methanol exposure, occupational neurological disease, and occupational respiratory disease

THERESA HAN MARKEY, MS, *Lecturer* ■ Adult and pediatric parenteral and enteral nutrition support; design, production, and delivery of metabolic research diets

CRAIG HARRIS, PHD, *Professor* ■ Mammalian developmental toxicology, biochemical mechanisms of teratogenesis, role of biochemical defenses influencing incidence and severity of dysmorphogenesis

HOWARD HU, MD, MPH, SCD, *Professor and Chair; Joint Appointment: Professor, Epidemiology and Medicine* ■ Environmental epidemiology, heavy metals, gene- and epigenetic-environment interactions; nutrient-toxicant interactions; early life origins of chronic disease; children's environmental health; global climate change and health

OLIVIER JOLLIET, PHD, *Associate Professor* ■ Environmental health risks and impacts, multimedia fate and exposure modeling, indoor and outdoor intake fractions, risks of chemicals, contaminated sites, trade and environmental justice, life cycle assessment of new technologies

GERALD KEELER, PHD, *Professor; Joint Appointment: Professor, Atmospheric, Oceanographic and Space Sciences* ■ Trace elements in the environment with a focus on mercury: sources, chemistry, transport and deposition; air pollution health effects and exposure assessment; air pollution meteorology and chemistry

RITA LOCH-CARUSO, PHD, *Professor* ■ Female reproductive toxicology, with a particular focus on environmental pollutant risks for normal and timely childbirth; development of human tissue culture methods for assessment of toxicant risks for parturition; physiologic, cellular and molecular

PETER MANCUSO, PHD, *Associate Professor* ■ Inflammation and infection of the lung, role of eicosanoids in pulmonary host defense, leptin and immune function, malnutrition

ANDREW D. MAYNARD, PHD *Professor* ■ Risk identification, assessment, management and communication; emergent risks; emerging technologies; science-informed decision-making

JOHN MEEKER, SCD, *Assistant Professor* ■ Exposure assessment and epidemiology studies investigating negative health effects associated with exposure to pesticides, phthalates, bisphenol a, flame retardants, PCBs, tobacco smoke, and other agents

JEROME NRIAGU, PHD, DSC, *Professor* ■ Sources, fate, and effects of toxic metals in the environment; environmental food contamination; water-quality issues in the Great Lakes; environmental health in developing countries

MARIE S. O'NEILL, PHD, *Associate Professor; Joint Appointment: Associate Professor, Epidemiology* ■ Environmental epidemiology, air pollution, climate change, environmental equity, international health, cardiovascular mechanisms

KAREN E. PETERSON, DSC, *Professor* ■ Determinants of intergenerational patterns of growth in mothers and children and the design and evaluation of domestic and international surveillance systems and community-based interventions in low-income, multiethnic populations

MARTIN PHILBERT, PHD, *Professor; Senior Associate Dean for Research* ■ Experimental neuropathology, development of nano-optical chemical systems, nanostructure-based imaging of head and neck tumors

RUDY RICHARDSON, PHD, *Professor* ■ Neural injury with applications to neurodegenerative disease and stroke, biomarkers of neurotoxicant exposure, dysfunction and recovery, chemistry and neurotoxicity of organophosphorus, risk assessment and policy

THOMAS ROBINS, MD, MPH, *Professor* ■ Exposure assessment and disease outcomes, epidemiology of inhaled toxins such as coal dust, lead, allergens, ambient air pollutants, metalworking fluid aerosols

LAURA ROZEK, PHD, *Assistant Professor* ■ Population-based studies focusing on the epigenetic, environmental and genetic risk factors that contribute to the development of human cancer, specifically head and neck and colorectal cancers; gene-environment and epigenetic-environment contributions to the risk of human chronic diseases

EDUARDO VILLAMOR, MD, MPH, DRPH, *Associate Professor; Joint Appointment: Associate Professor of Epidemiology* ■ Nutritional epidemiology, nutritional determinants of maternal and child health, developmental origins of health and disease, reproductive epidemiology, nutrition and infection

CHUANWU XI, PHD, *Assistant Professor* ■ Biofilms, water quality, bio-imaging, molecular microbial ecology, antibiotic resistance, environmental genomics, *Acinetobacter* and *Mycobacterium*, infectious diseases, preterm birth, hip-joint infections, urinary tract infections, metalworking fluids

EDWARD ZELLERS, PHD, *Professor; Joint Appointment: Professor, Chemistry* ■ Microfabricated chemical sensor arrays and microanalytical systems for real-time monitoring of workplace contaminants in air and biological media, permeation of organic solvents through protective clothing