# ENVIRONMENTAL HEALTH SCIENCES

Department Website (http://www.sph.sc.edu/enhs/default.htm)

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Environmental Health Sciences examine the interactions between humans and their environment. Human activity impacts on environmental quality and ecosystem health are often principal determinants of human health. Exploration of these complex interactions often combines elements of both pure and applied sciences, e.g., agriculture, biology, chemistry, marine sciences, geology, engineering, toxicology, nanomaterials science, public health, and medicine.

Faculty members of the Department of Environmental Health Sciences (ENHS) have expertise in a broad range of disciplines necessary for solving the vexing and complex problems in Environmental Health Sciences. Our expertise includes air pollution; nanoscience; climate change research; environmental sustainability; mammalian and molecular toxicology; soil science; environmental and public health-related microbiology; aquatic ecology; marine ecotoxicology; ecosystem modeling; public health preparedness and response; exposure analysis and risk\impact assessment; environmental planning and engineering; environmental physiology; environmental epidemiology; landscape ecology; remote sensing, machine learning and GIS; water quality, wastewater treatment and human health surveillance; soil health and sustainable agriculture; wetlands ecology; resource management; community engagement and environmental justice.

The mission of the Department of Environmental Health Sciences is founded on the philosophy that healthy environments enhance the health and well-being of individuals and the communities in which they live. Thus the broader goals of the department are to:

- develop improved methods for assessing the health and quality of the environment
- promote a clearer understanding of interactions between humans and their natural, home, and work environments
- achieve molecular to landscape levels of resolution for understanding health/environment interactions
- sustain and protect natural resources upon which life depends
- provide scientifically sound information for policymakers and the public to encourage social awareness of and societal actions toward sustaining a healthy relationship with the environment.

The Department of Environmental Health Sciences offers the following degrees: Master of Public Health (MPH), Master of Science (MS), and Doctor of Philosophy (PhD). A common level of core public health training is completed prior to undertaking advanced study and research within each degree.

## Programs Overview

### Master's Degrees

#### Master of Public Health (MPH)

Daniel Kilpatrick, *MPH Program Director*

The MPH degree is oriented toward development of a broad background in public health and preparation for professional practice. The MPH degree requires 42 credit hours of study and is practice-oriented. MPH students complete a supervised internship (Applied Practical Experience) in lieu of a thesis.

#### Master of Science (MS)

The MS degree is an academic research degree which may be tailored to individual interests and job market needs. The MS degree requires a minimum of 36 graduate hours and combines real-world problem solving and research skills with other technical, health, and related skills to prepare effective environmental health researchers for the public, government, and private sectors. Students complete a research thesis.

### Doctoral Degree

#### Doctor of Philosophy (PhD)

Doctoral students complete a program of study that emphasizes professional development, scientific competence, and research expertise. The PhD requires a minimum of 60 hours of course work beyond the baccalaureate and includes 12 credit hours of dissertation preparation. Those students entering without a master's degree are required to take additional foundational course work in environmental health sciences equivalent to the master's degree. To achieve doctoral candidate status, students must pass a qualifying examination after the first year of study. Upon completion of all course and language requirements or research methods proficiency, doctoral candidates must pass an oral and/or written comprehensive examination. All doctoral candidates must prepare and defend a dissertation that represents significant research in their area of advanced study. Doctoral students must demonstrate a reading proficiency in a modern foreign language if deemed necessary by the doctoral advisory committee.