

# Learning Objectives:

## Master of Science in Biodiversity, Conservation and Policy

- Demonstrate an integrated understanding of conservation, environmental science and policy.
- Understand and coordinate research in conformity with biological, social science and resource management analytical techniques and applications.
- Understand scientific ethics as practiced in western societies, including the topics of human subjects, animal use in research, and plagiarism.

## Bachelor of Science in Interdisciplinary Studies with a Concentration in Environmental Science

- Identify and describe the various systems comprising the Earth's environment, including recognizing key aspects of these systems' interaction and feedback loops.
- Perform quantitative analyses specific to environmental evaluation, including assessing relevant parameters and interpreting their trends in space and/or time.
- Apply field methods, data, concepts, and models to the solution of problems in the environmental sciences.

## Bachelor of Arts in Geography

- An understanding of the complex spatial relationships, interactions, and processes within the cultural and natural environments of the Earth's surface.
- An understanding of geography's distinctive disciplinary perspectives including concepts of place, location, region, and environment, along with exposure to the varied theoretical worlds of contemporary geography.
- An understanding of one or more specific regions of the world.

## Bachelor of Arts in Urban Studies and Planning

- Knowledge of urbanism and urbanization as historic, geographic, and cultural processes, through the lens of several disciplines.
- Understanding of the historical development and contemporary condition of the US city.
- Comparative understanding of global patterns of urbanism and urbanization..
- Multidisciplinary understanding of urban related issues
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# Student Learning Objectives Environmental Health Sciences

## Master of Science

### Environmental Chemistry

- Acquire broad knowledge of the field of Environmental Chemistry including development of methods for ultra-trace analysis of pollutants in air, water, soil and biological matrices; understanding of sources, chemodynamics and fate of environmental pollutants in ecosystems.
- Understand the methods used to assess human and environmental exposure pathways of environmental pollutants and quantitative analysis of exposure levels; environmental processes that affect the dynamics and fate pollutants; multimedia monitoring and modeling, biomonitoring and bioaccumulation of toxic chemicals.
- Be familiar with the research literature, analytical techniques, and applications of those techniques in Environmental Chemistry. Interpret and critically analyze the data on environmental chemical analysis; conduct research independently and be able to perform basic statistical analysis of data generated from laboratory or field studies.

### Environmental and Occupational Health

- Have a broad knowledge of the field of environmental health including an understanding of the interaction of principles contained in fundamental environmental chemistry, biology, toxicology, epidemiology and general environmental health. Using this fundamental knowledge the students will then develop a refined knowledge related to their particular field of study within environmental or occupational health..
- Assess risks from either environmental or occupational exposures and identify measures to mitigate the risks.

## Master of Public Health (MPH)

### *ENVIRONMENTAL HEALTH SCIENCES*

- Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents
- Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
- Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.
- Specify current environmental risk assessment methods.
- Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.
- Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.
- Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.
- Develop a testable model of environmental insult.

### *PUBLIC HEALTH BIOLOGY*

- Specify the role of the immune system in population health.
- Describe how behavior alters human biology.
- Identify the ethical, social and legal issues implied by public health biology.
- Explain the role of biology in the ecological model of population-based health.
- Articulate how biological, chemical and physical agents affect human health.
- Apply biological principles to development and implementation of disease prevention, control, or management programs.
- Apply evidence-based biological and molecular concepts to inform public health laws, policies, and regulations.
- Integrate general biological and molecular concepts into public health.

#### *Environmental Health Sciences Concentration Competencies*

- Acquire basic knowledge in the area of environmental health, including two of the three sciences relevant to environmental health: chemistry, toxicology, and radiation sciences.
- Understand the strengths and limitations of various laboratory methodologies to make value use of scientific data and their application to environmental health problems.
- Become part of a public health team, using scientific knowledge and communication skills to solve public health problems.

## **Doctor of Public Health (DrPH)**

### Environmental and Occupational Health

- Have a broad knowledge of the field of environmental health including an understanding of the interaction of principles contained in fundamental environmental chemistry, biology, toxicology, epidemiology and general environmental health. Using this fundamental knowledge the students will then develop a refined knowledge related to their particular field of study within environmental or occupational health.
- Assess risks from either environmental or occupational exposures and identify measures to mitigate the risks.

#### *ADVOCACY*

- Present positions on health issues, law and policy.
- Influence health policy and program decision-making based on scientific evidence, stakeholder input, and public opinion data.
- Design action plans for building public and political support for programs and policies.
- Develop evidence-based strategies for changing health law and policy.

#### *COMMUNICATION*

- Discuss the inter-relationships between health communication and marketing.
- Integrate health literacy concepts in all communication and marketing initiatives.

*COMMUNITY/CULTURAL ORIENTATION*

- Engage communities in creating evidence-based, culturally competent programs.
- Assess cultural, environmental, and social justice influences on the health of communities.

*CRITICAL ANALYSIS*

- Develop health surveillance systems to monitor population health, health equity, and public health services.