MASTER OF PUBLIC HEALTH IN THE FIELD OF GLOBAL ENVIRONMENTAL HEALTH

Program Director  J. Graham
Practicum Director  S. McCormick

Mission
The Mission of the Global Environmental Health MPH program – a joint program between the Departments of Global Health and Environmental and Occupational Health – is to educate individuals who are committed to working in resource-poor settings and applying analytic skills to prevent or mitigate the adverse impact of environmental hazards on human health. The program has a particular focus on traditional environmental health hazards—that is, health risks that are a consequence of a lack of access to clean water, inadequate sanitation, poor hygiene, household air pollution, solid waste disposal, and vector-borne diseases such as malaria.

Goals
Our graduates will hold a multidisciplinary knowledge base and skill set that will provide them with a framework for addressing environmental health issues from environmentally mediated disease in the poorest performing regions of the world. They will understand the scientific and cultural foundations of environmental health in order to:

• Assess environmental exposures and understand the effects of these exposures on human health;
• Interpret epidemiologic and other research findings related to global environmental health risks; and
• Assume leadership roles in designing, implementing and evaluating programs that focus on modification of environmental health-related behaviors at local, regional, national and/or global levels.

COMPETENCIES

Upon completion of the MPH program in global environmental health, students should possess the following functional competencies:

Epidemiology & Biostatistics
Critically assess existing epidemiologic research.
• Summarize goals, design, methods, and results of published research.

PUBH 6015  Culminating Experience
PUBH 6121  Environmental and Occupational Epidemiology
PUBH 6131  Applied Data Analysis in EOH
PUBH 6400  Global Health Frameworks

• Identify biases and evaluate the extent to which they threaten study validity.

PUBH 6121  Environmental and Occupational Epidemiology

• Apply statistical principles to interpret epidemiologic data.

PUBH 6121  Environmental and Occupational Epidemiology
PUBH 6131  Applied Data Analysis in EOH

Design appropriate studies for investigating EOH problems.
• Identify appropriate resources and databases to plan and conduct studies.

PUBH 6015  Culminating Experience
PUBH 6121  Environmental and Occupational Epidemiology
PUBH 6128  Global Envrnmtl & Occptnl Hlth
PUBH 6400  Global Health Frameworks
PUBH 6411  Global Health Qualitative Research Methods

• Given a research question, identify appropriate study design, choose appropriate study populations, describe relevant exposure assessment methods, identify appropriate data collection instruments and processes, and describe procedures for protecting human subjects.

PUBH 6015  Culminating Experience
PUBH 6121  Environmental and Occupational Epidemiology
PUBH 6126  Assessment&Control/Env Hazards
PUBH 6131  Applied Data Analysis in EOH
PUBH 6411  Global Health Qualitative Research Methods

Conceptualize and carry out data analysis to address study goals.
• Conceptualize research questions

PUBH 6015  Culminating Experience
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### Assess Global Environmental and Occupational Risks

**Assess environmental and occupational exposures.**
- Describe the principle of operation, capability, and limitations of assessment instrumentation.

**PUBH 6126** Assessment & Control/Env Hazards
- Assess severity of potential hazards and select the appropriate instrument and measurement method.

**PUBH 6126** Assessment & Control/Env Hazards
- Interpret exposure measurements to assess the severity of a chemical, physical, or biological hazard.

**PUBH 6126** Assessment & Control/Env Hazards
- Compare exposure data against established occupational & environmental health standards and guidelines.

**PUBH 6126** Assessment & Control/Env Hazards
- Evaluate the strengths and weaknesses of epidemiologic exposure assessments.

**PUBH 6121** Environmental and Occupational Epidemiology
- Recommend appropriate control strategies, such as: environmental health interventions, protective equipment, behavior change campaigns, to mitigate health hazards.

**PUBH 6126** Assessment & Control/Env Hazards

### Global Environmental Health Policy Analysis

**Synthesize scientific evidence in order to inform global environmental health policy and reduce and prevent environmental health related disease and injury.**
- Describe the authority and approaches of global environmental health agencies.

**PUBH 6128** Global Environmental and Occupational Health
- Apply the risk assessment, risk management, and Source-to-Effect frameworks.

**PUBH 6126** Assessment & Control/Env Hazards
- Explain the role of scientific, economic, ethical, and political interests in development and implementation of global environmental health policy.

**PUBH 6128** Global Environmental and Occupational Health
- Conduct policy analysis relevant to global environmental health problems.
  - Discuss interventions used in global environmental health.

**PUBH 6126** Assessment & Control/Env Hazards
- Analyze approaches used in global environmental health policy development.

**PUBH 6128** Global Environmental and Occupational Health
- Analyze the role of global environmental health policies and politics in promoting sustainability.

**PUBH 6126** Assessment & Control/Env Hazards

**PUBH 6400** Global Health Frameworks

**PUBH 6435** Global Health Program Development and Implementation
Design, Implement, Monitor and Evaluate Global Environmental Health Programs

Synthesize relevant information in order to assess and manage environmental and occupational risks.

- Characterize political, social, cultural, religious and economic context to determine feasible interventions.

- Given a specific context, design a plan to collect relevant information to fully characterize global environmental health hazards and related human health effects.

- Evaluate data to characterize potential global environmental health hazards, potential for human exposure and health effects.

- Recommend possible approaches to reduce the risk and/or impact of exposure to global environmental health hazards, and evaluate these approaches with regard to ethical issues, technical feasibility, resource requirements, and policy context.

- Communicate with relevant stakeholder groups about environmental and occupational health issues and recommendations, using appropriate terminology and data.

REQUIREMENTS

All students who select the global environmental health program enroll in core courses (15 credits), program-specific courses (17 credits), and electives (9 credits). The 45-credit degree program also includes a practicum (2 credits) and a culminating experience (2 credits) where students apply their didactic education in a real world setting.

Program Requirements

Required Core Courses

- PUBH 6001 Biological Concepts/Public Health
- PUBH 6002 Biostatistical Applications for Public Health
- PUBH 6003 Principles and Practice of Epidemiology
- PUBH 6004 Environmental and Occupational Health in a Sustainable World
- PUBH 6006 Management and Policy Approaches to Public Health
- PUBH 6007 Social and Behavioral Approaches to Public Health

Required EOH Courses

- PUBH 6121 Environmental and Occupational Epidemiology
- PUBH 6126 Assessment and Control of Environmental Hazards
- PUBH 6128 Global Environmental and Occupational Health
- PUBH 6131 Applied Data Analysis in Environmental Health

Required GH Courses

- PUBH 6400 Global Health Frameworks
- PUBH 6411 Global Health Qualitative Research Methods
- PUBH 6435 Global Health Program Development and Implementation

Electives

9 credits from the following:
PUBH 6123  Toxicology: Applic for PH Pol
PUBH 6132  Design, Implementation and Evaluation of Global Water, Sanitation and Hygiene (WASH) Programs
PUBH 6125  Intro-Children’s Health & Env
PUBH 6127  Germs: An Introduction to Environmental Health Microbiology
PUBH 6130  Sustainable Energy & Environmt
PUBH 6133  Social Dimen Clim Chnge & Hlth
PUBH 6134  Communication Science for PubH
PUBH 6262  Intro-Geog Information Systems
PUBH 6271  Disaster Epidemiology
PUBH 6435  Global Health Program Development and Implementation
PUBH 6437  Case Study Methods for Global Health Evaluation
PUBH 6480  Public Health in Complex Emergencies

**Practicum and Culminating Experience**

PUBH 6014  Practicum
PUBH 6015  Culminating Experience

**Graduation Requirements**

1. Graduate credit requirement: 45 graduate credits
2. Course requirements: Successful completion of core and program-specific courses
3. Grade point requirement: 3.0 (B average) overall grade point average
4. Time limit requirement: The degree must be completed within four years.
5. Transfer credit policy: Up to 12 graduate credits that have not been applied to a previous graduate degree may be transferred to the Master of Public Health program. Up to 18 credits may be transferred to the Master of Public Health from the SPH graduate certificate. Credits must have been earned from an accredited institution in the last 3 years with a grade point of 3.0 or better.