**Introduction: Master of Science**

The mission of the EER program is to investigate and mitigate health risks associated with environmental and occupational hazards and provide scientific evidence for sound environmental and health policies by using an interdisciplinary approach. The EER Program has identified the essential elements of a broad knowledge base representing environmental health sciences and our students take core courses in human physiology and toxicology, exposure assessment, environmental and occupational epidemiology, and risk assessment. In addition to the defined set of core courses, we also provide opportunity for research, concentrated course work, practical experience and exploration in a number of related disciplines. Graduates of the EER Program will have a sound technical foundation in basic topics in environmental health, as well as specific coursework related to their chosen specialty area.

All students pursuing the EER Program's MS degree in Environmental Health will acquire core competencies in each of the three domains in which faculty members focus their research:

**Exposure Assessment**, which emphasizes the chemical, physical, microbiological, and engineering aspects of environmental and occupational exposures. Faculty members study the transport and fate of environmental contaminants by measurement and modeling of ambient, indoor, and personal exposures to environmental and workplace contaminants. They also develop instruments and methods for collecting, analyzing, and assessing the effects of physical, chemical, and biological stressors.

**Environmental Epidemiology**, which focuses on identifying and measuring the influence of physical, chemical, and biological environmental factors on human disease in communities to provide scientific evidence for sound environmental and health policies. Faculty members study the effects of air pollution on respiratory and cardiovascular health, and examine the importance of genetic susceptibility to environmentally induced diseases.

**Risk Assessment**, which integrates evidence from exposure assessment, epidemiology, toxicology, and other disciplines to inform policy decisions in the presence of uncertainty. Faculty members are involved in research and training on analytic methods and applications to quantify human health risks with applications that include evaluations of new products, fuels, water supplies, technologies, remediation strategies, and development of policies to protect both ecological and human health.

Master of Science students take additional courses beyond these core competency areas, to develop expertise in one or more of the areas of interest described below:

- **Environmental epidemiology** - for students interested in measuring the influence of environmental factors (physical, chemical, and biological) on human disease in communities to provide scientific evidence for sound environmental and health policies.

- **Environmental exposure assessment** – for students interested in training in the identification and characterization of human and ecological exposures to environmental contaminants, and in modeling their fate and transport, to develop strategies to control environmental hazards, allergens, and pathogens.

- **Ergonomics and Safety** – for students interested in learning a public health and engineering approach to the prevention of work-related injuries and musculoskeletal disorders, encompassing exposure assessment, occupational biomechanics, and epidemiology.

- **Occupational hygiene** – for students interested in training in the anticipation, identification, evaluation, and control of occupational hazards.

- **Risk and decision sciences** – for students interested in an integrated education in environmental science, risk analysis, and decision science as applied to environmental management.
Graduates of our MS program have assumed positions in government, in private companies, or in research institutions. In the past several years, some graduates have gone to work as industrial hygienists with biotech firms, consulting companies, and the military. Some have gone to work for nonprofit community or international organizations, while others have gone on to pursue doctoral programs. In the risk assessment track, graduates have pursued careers utilizing decision analysis skills in program design, management, and policy. Recent graduates in the environmental epidemiology track are working in academic research, public agencies, environmental advocacy groups, and environmental consulting companies.

**Master of Science Course Requirements**

EER's MS in Environmental Health is classified as a research degree and, as such, students are required to write a thesis during the second year of their studies. In the Fall semester of the second year, each MS student will develop a thesis topic, choose a mentor and submit a Thesis Proposal Form that outlines the proposed work. In the Spring semester of the second year, students will register for course EH507 to complete their thesis work. Additional information about this process will be forthcoming.

EER students must fulfill requirements of both the EER Program and the Department of Environmental Health (EH).

**EH Departmental Requirements:**

ALL students in the Department of Environmental Health are required to take EH205: Human Physiology

**EER Program Requirements:**

EER Master of Science students must take the following courses:

- BIO201: Introduction to Statistical Methods
- EPI201: Epidemiological Methods I
- EPI202: Elements of Epidemiological Research**
- EH504: Principles of Toxicology (for 5 credits)
- EH507: Environmental Exposure, Epidemiology and Risk Practicum
- EH510: Fundamentals of Human Exposure Assessment
- ID215: Environmental and Occupational Epidemiology
- EH257**: Water Pollution
- EH263: Analytical Methods and Exposure Assessment
- EH297**: Atmospheric Environment Seminars
- RDS500: Risk Assessment

**EPI202, EH257 and EH297 are recommended but not required for students with a focus on Occupational Hygiene or Ergonomics and Safety.

**EER students must also fulfill requirements for their chosen specialty area:**

**Environmental Exposure Assessment students must take the following:**

- 5 credits of Biostatistics beyond BIO201
- at least 2.5 credits in environmental law or environmental policy - Students may take EH236: Epidemiology of Environmental & Occupational Health Regulations, EH278: Human Health and Global Environmental Change, MIT 1.811J: Environmental Law, Policy and Economics, taught at MIT in the Fall, or a selection of courses can be found on the following websites of Harvard Law School (HLS) and the Harvard Kennedy School of Government (HKS):

  - [http://blogs.law.harvard.edu/environmentallawprogram/courses/](http://blogs.law.harvard.edu/environmentallawprogram/courses/)
  - [http://www.hks.harvard.edu/environment/courses.html](http://www.hks.harvard.edu/environment/courses.html)
PLEASE NOTE: Before registering for an environmental law/policy course at HLS or HKS, students must contact their advisors and Rose West with a copy of the course description, to ensure the course’s material will qualify to fulfill the requirement.

Environmental Epidemiology students must take the following:

- EPi203: Design of Cohort and Case-Control Studies
- EPi204: Analysis of Case-Control and Cohort Studies
- BIO210: The Analysis of Rates and Proportions (or BIO213: Applied Regression for Clinical Research)
- ID271: Advanced Regression for Environmental Epidemiology

Risk and Decision Sciences students must take the following:

- RDS280: Decision Analysis for Health and Medical Practices
- RDS282: Economic Evaluation of Health Policy and Program Management
- at least 2.5 credits in environmental law or environmental policy - Students may take EH236: Epidemiology of Environmental & Occupational Health Regulations, EH278: Human Health and Global Environmental Change, MIT 1.811J: Environmental Law, Policy and Economics, taught at MIT in the Fall, or a selection of courses can be found on the following websites of Harvard Law School (HLS) and the Harvard Kennedy School of Government (HKS):
  - http://blogs.law.harvard.edu/environmentallawprogram/courses/
  - http://www.hks.harvard.edu/environment/courses.html

Occupational Hygiene and Ergonomics and Safety students must take the following:

- EH241: Occupational Safety and Injury Prevention
- EH243: Ergonomics/Human Factors
- EH253: Engineering Controls for Occupational Hazards
- EH262: Introduction to the Work Environment
- EH279: The Radiation Environment: Its Identification, Evaluation and Control
- EH292: Properties and Behavior of Airborne Particles
- ID263: Practice of Occupational Health
- Students with a focus in Ergonomics and Safety are also required to take Biomedical Engineering 110: Physiological Systems Analysis

Additional Requirements for Master of Science students:

The Harvard TH Chan School of Public Health requires that all students maintain a grade point average of at least 2.7 (B-). PLEASE NOTE, however, that the EER Program prefers EER Master of Science students maintain a grade point average of 3.3 (B+) or better.
Course Load

A typical course load is 20 credits per semester—the equivalent of four full-time (5-credit) courses. Students must register for a minimum of 15 credits to be considered full-time students. Harvard TH Chan School of Public Health students may take courses at other Schools within Harvard University and at other participating Schools (such as MIT). However, at least 50% of credits must consist of courses offered at the School of Public Health.

Course loads of more than 20 credits are allowed within reason—however, PLEASE NOTE that full tuition covers only 40 credits per year. Students taking additional credits may be responsible for payment for each additional credit above the 40 credit total. Students supported by training grants may have additional requirements and restrictions specific to the training grant. These students should always check with the administrator(s) of the grant providing their support, to clarify what is covered.

Credit and Residency Requirements

Students admitted to a one-year MS program must spend a minimum of one academic year in residence at Harvard University and successfully complete a program of at least 42.5 credit units. At least 30 of the 42.5 credits must be taken for an ordinal grade.

Students admitted to a two-year MS program must spend two academic years in residence and successfully complete a program of at least 80 credit units. At least 40 of the 80 credits must be taken for an ordinal grade.

Students in the EER Program must take ALL required courses (required by the School, the EH Department or the EER Program) for an ordinal grade. No required course can be taken on a Pass/Fail basis.

Waiver Procedure

To waive a required course, a student must obtain written permission from the course instructor by presenting evidence of previous equivalent coursework. No credit units are awarded for a course that is fully or partially waived.

To waive one of the School-required Biostatistics or Epidemiology core courses, a “Waiver of Core Course” form is required. Students submitting this form should first obtain the approval from their faculty advisor, then obtain signatures of the course instructor(s). The completed form must be submitted to Barbara Zuckerman, Assistant Director of Faculty and Academic Affairs for the Department of Environmental Health (Building 1, 13th Floor, Room 1301), for approval of the Chair of the EH Department. The “Waiver of Core Course” form can be obtained from the Registrar’s Office (http://cdn1.sph.harvard.edu/wp-content/uploads/sites/47/2012/11/form_core_waiver.pdf).

To waive EH department or EER program requirements, a “Department/Program Requirements Waiver Form” is required. Students submitting this form should obtain signatures from the faculty advisor and the course instructor and submit the completed form to Rose West, for approval of the EER Program Director. This form can be obtained on the EER website (http://www.hsph.harvard.edu/eer/waiver.pdf).

Changes in Specialty Area/Program

Students wishing to change their specialty area within the EER Program (for example, from Environmental Epidemiology to Risk Assessment) may do this by completing a “Request for Change of Major/Specialty Area” form. This form must be approved by the faculty advisor and submitted to Rose West, for approval of the EER Program Director. Please contact Rose (rwest@hsph.harvard.edu; 617-384-8824) to obtain a copy of this form.

Changes in degree programs

Changes in degree programs within EER (for example, from masters to doctoral), must be done via the Admissions Office. This requires submission of a
Keep Your Files Up-to-Date

It is imperative that the EER Program student files be kept up-to-date. Therefore, each student is required to submit relevant information to Rose West at Landmark. Necessary items include petitions for program changes (waivers, etc) or other documents related to your academic program. Please also provide a forwarding address and phone number, before you graduate.

Employment

Students often try to work in positions with corporations, government agencies, unions or public interest groups in the summer between their first and second year of study. Students interested in summer work should begin looking for a position during the beginning of the Spring term.

Email distribution of job opportunities occurs throughout the year. The staff of the Career Services Office (CSO) can also provide services for students, post-doctoral fellows and alum, starting with their first day of classes and lasting throughout their professional careers. An overview of the CSO services can be found at the following website:

http://www.hsph.harvard.edu/career-services/

The CSO can be reached via email at careers@hsph.harvard.edu, or by phone at 617-432-1034. The career offices of other Harvard schools can be found here:

http://www.hsph.harvard.edu/career-services/harvard-career-offices/

Changes from one EH program to another

To change programs within the EH Department (for example, from EER to EOME) also requires submission of a General Petition (http://cdn1.sph.harvard.edu/wp-content/uploads/sites/47/2012/11/form_general_petition.pdf) to the Registrar and a new application (http://cdn1.sph.harvard.edu/wp-content/uploads/sites/47/2013/09/Change-in-Degree-or-Department-Application.pdf) to the Office of Admission, including new references and a new statement of purpose. Copies of all paperwork should be submitted to Barbara Zuckerman, for the EH Department files, and to Rose West, for EER Program files.

Change of faculty advisor

Changing your faculty advisor may be done by submitting a “Request to Change Advisor Form” and the form can be obtained from Rose West. This form must be approved by the current advisor, the new advisor and the Department Chair. Students wishing to change advisors should obtain the current advisor's and proposed new advisor's signatures on the form and then submit the form to Barbara Zuckerman, for approval of Dr. Dockery.

new application (http://cdn1.sph.harvard.edu/wp-content/uploads/sites/47/2013/09/Change-in-Degree-or-Department-Application.pdf), including new references and a new statement of purpose. In addition to the new application, a General Petition must be submitted. This form may be obtained from the HSPH Registrar's Office (http://cdn1.sph.harvard.edu/wp-content/uploads/sites/47/2012/11/form_general_petition.pdf) and must also be completed and submitted to the Registrar's Office. Copies of all paperwork should be submitted to Barbara Zuckerman, for the EH Department files, and to Rose West, for EER Program files.

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Employment

Students often try to work in positions with corporations, government agencies, unions or public interest groups in the summer between their first and second year of study. Students interested in summer work should begin looking for a position during the beginning of the Spring term.

Email distribution of job opportunities occurs throughout the year. The staff of the Career Services Office (CSO) can also provide services for students, post-doctoral fellows and alum, starting with their first day of classes and lasting throughout their professional careers. An overview of the CSO services can be found at the following website:

http://www.hsph.harvard.edu/career-services/

The CSO can be reached via email at careers@hsph.harvard.edu, or by phone at 617-432-1034. The career offices of other Harvard schools can be found here:

http://www.hsph.harvard.edu/career-services/harvard-career-offices/
Other Useful Websites:

Students are encouraged to visit the following websites:

Harvard School of Public Health Office of the Registrar:

http://www.hsph.harvard.edu/administrative-offices/registrar/

Harvard School of Public Health Student Handbook:

http://www.hsph.harvard.edu/academics/student-handbook/

The Harvard University Center for the Environment (HUCE):

http://www.environment.harvard.edu/

Harvard University:

http://www.harvard.edu/

Massachusetts Institute of Technology:

http://web.mit.edu/