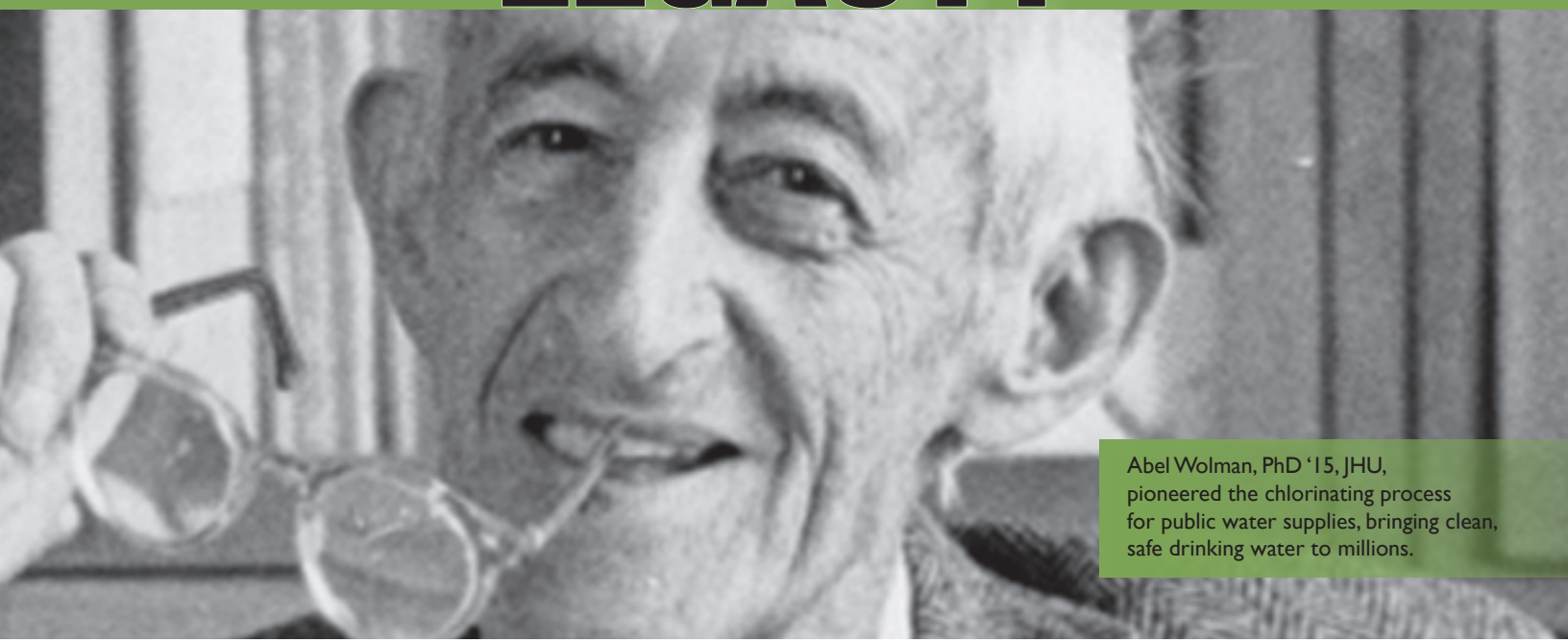
department *of*
environmental health sciences

environmental health engineering • occupational and environmental health • physiology • toxicology

2010-2011
student handbook

Anna M. Baetjer, ScD '24, JHSPH, pioneered research and training programs in occupational health.

What will be your
LEGACY?



Abel Wolman, PhD '15, JHU, pioneered the chlorinating process for public water supplies, bringing clean, safe drinking water to millions.

www.jhsph.edu/dept/ehs

JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

Department of Environmental Health Sciences

Johns Hopkins Bloomberg School of Public Health

Student Handbook 2010 - 2011

The Department of Environmental Health Sciences reserves the right to change without notice any programs, policies, requirements, and regulations in this handbook. Updates and revisions to this handbook will be posted on the departmental website, at *www.jhsph.edu/dept/ehs*.

Additional policy information is included in various School publications including the 2010-2011 Catalog, Student Handbook, Policies and Procedure Manual (PPM), and website, which may be accessed at *www.jhsph.edu*.

Message from the Department Chair

Welcome to the Johns Hopkins Bloomberg School of Public Health, the nation's leading training and research institution for public health professionals. As one of the original departments of the School, the Department of Environmental Health Sciences has a long and proud tradition of excellence in research, professional practice and training. As a graduate student, you will become an integral contributor to our programs.

Our Student Handbook will help you maximize your education, giving you insights into coursework and navigating the Department's academic programs. Please take time to read the handbook, and use it as a resource during your time in the Department.

The goal of our program is to prepare you for the constantly evolving and emerging public health challenges. Our faculty, staff, and researchers, will work with you in a partnership during your time here, forming the foundation for your career. No matter what field of endeavour, it is our mission to prepare you to take on leadership positions, in the spirit of Anna M. Baetjer and Abel Wolman.

To make your educational experience more enriching, I encourage you take full advantage of the Departmental seminars and School-wide symposiums. These venues provide opportunities for networking and debate. Please visit the Departmental website regularly, for current events, news and updates, and faculty and students making local and national news.

Collectively, the members of the Department of Environmental Health Sciences are committed to maintaining a supportive and challenging home for you. We look forward to a successful academic year, and spending some of the most dynamic years of your academic careers with you.

Best wishes as you embark on a developing a new legacy,

John D. Groopman, PhD
Chair and Anna M. Baetjer Professor

THE JOHNS HOPKINS UNIVERSITY
BLOOMBERG SCHOOL OF PUBLIC HEALTH
2010-2011 ACADEMIC YEAR CALENDAR

SUMMER TERM

SUMMER INSTITUTES	**Begin week of June 7**
Internet-Based/Part-Time MPH New Student Orientation	**Sat June 5 – Sun June 6**
Registration Begins for Regular Summer Term	**T April 13**
REGULAR SUMMER TERM	**W June 30 - F Aug 20 (37 class days)**

1st Term Registration Begins for Continuing and Special Students	T June 1
Regular Summer Term Registration Ends	F June 18
NEW STUDENT ORIENTATION/REGISTRATION	M June 28 – T June 29
Instruction Begins for Summer Term	W June 30
INDEPENDENCE DAY HOLIDAY	M July 5
Regular Summer Add/Drop Period	Varies per course schedule
2nd Term Registration Begins	F July 30
1st Term Registration Ends for Continuing and Special Students	F Aug 13
Last Class Day of Summer Term	F Aug 20

1ST TERM **Th Aug 26 - W Oct 20 (39 class days, M-F)**

NEW STUDENT ORIENTATION/ REGISTRATION	M Aug 23 - W Aug 25
Instruction Begins for 1st Term	Th Aug 26
Add/Drop Period	Th Aug 26 - W Sept 8
LABOR DAY RECESS	M Sept 6
2nd Term Registration Ends	F Oct 8
Winter intersession Registration Begins	Th Oct 14
Last Class Day of 1st Term	W Oct 20

2ND TERM **Th Oct 21 - F Dec 17 (40 class days, M-F)**

Instruction Begins for 2nd Term	Th Oct 21
Add/Drop Period	Th Oct 21 – W Nov 3
THANKSGIVING RECESS	Th Nov 25 – Su Nov 28
Registration Begins for 3rd Term	T Nov 23
Winter Intersession Registration Ends	F Dec 10
Last Class Day of 2nd Term	F Dec 17

Internet-Based/Part-Time MPH New Student Orientation	**Sat Jan 8 – Sun Jan 9**
WINTER INTERSESSION	**M Jan 10 – F Jan 21 (no class Monday, January 17)**

3rd Term Registration Ends	T Jan 11
MARTIN LUTHER KING, JR. HOLIDAY RECESS	M Jan 17

3RD TERM **M Jan 24 - F Mar 18 (40 class days, M-F)**

Instruction Begins for 3rd Term	M Jan 24
Add/Drop Period	M Jan 24 - F Feb 4
Registration Begins for 4th Term	M Feb 7
Last Class Day of 3rd Term	F Mar 18
4th Term Registration Ends	F Mar 18
SPRING RECESS	M Mar 21 - F Mar 25

4TH TERM **M Mar 28– F May 20 (40 class days, M-F)**

Instruction Begins for 4th Term	M Mar 28
Add/Drop Period	M Mar 28 – F Apr 8
Last Class Day of 4th Term	F May 20
PUBLIC HEALTH CONVOCATION	W May 25
UNIVERSITY COMMENCEMENT	Th May 26
RESIDENCY PROGRAM ENDS	Th June 30

As of 11/2/09

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

ACADEMIC ETHICS CODE

POLICY

The faculty and students of the Bloomberg School of Public Health have the joint responsibility for maintaining the academic integrity and guaranteeing the high standard of conduct of this institution.

An ethical code is based upon the support of both faculty and students who must accept the responsibility to live honorably and to take action when necessary to safeguard the academic integrity of this University.

Students enrolled in the Bloomberg School of Public Health assume an obligation to conduct themselves in a manner appropriate to The Johns Hopkins University's mission as an institution of higher education. A student is obligated to refrain from acts which he or she knows, or under the circumstances has reason to know, impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating; plagiarism; knowingly furnishing false information to any agent of the University for inclusion in the academic records; violation of the rights and welfare of animal or human subjects in research; misconduct as a member of either School or University committees or recognized groups or organizations.

PROCEDURE

All members of the Johns Hopkins community are responsible for immediately informing the Academic Ethics Board of the Bloomberg School of Public Health of any suspected violations of its Constitution. The Ethics Board, composed of six students and four faculty members, is responsible for implementing its Constitution according to the procedures set forth therein. This includes formal hearings of suspected violations. Students and faculty should become familiar with the Constitution, copies of which can be obtained at the office of one of the deans responsible for student affairs.

Allegations of fraud in research by students will be handled and resolved according to the policies and procedures specified in Faculty PPM 7 - Fraud in Research. Penalties for students who are found responsible for engaging in fraud in research under Faculty PPM 7 may be selected from among the penalties specified in the Student Academic Ethics Code (Student PPM 1) as appropriate.

Allegations of violations of academic integrity by students in the School are covered under the policies and procedures contained in PPM for Students - 1 (Academic Ethics) and the School's Academic Ethics Code.

Allegations of sexual harassment are covered by the University's Sexual Harassment Prevention and Resolution Program for faculty, staff and students. The University encourages individuals to report incidents of sexual harassment and provides a variety of avenues, both formal and informal, by which individuals can report complaints of sexual harassment. Allegations of sexual harassment by students are covered under the JHU program and under the Student Conduct Code.

Allegations of unsatisfactory performance or unacceptable behavior by faculty are covered by PPM Faculty – 8 (Procedure for Handling Allegations of Unsatisfactory Performance or Unacceptable Behavior), and allegations of fraud or misconduct during the conduct of research by faculty are covered by PPM Faculty - 7 (Fraud in Research).

Allegations of misconduct by staff are covered by policies and procedures established by the University Office of Human Resources as stated in the Personnel Policy Manual.

(This information is taken from the Schools POLICY AND PROCEDURE MEMORANDUM STUDENTS – 1, SUBJECT: Academic Ethics.)

Table of Contents

THE DEPARTMENT of ENVIRONMENTAL HEALTH SCIENCES

MISSION

The Department of Environmental Health Sciences (EHS) integrates diverse scientific disciplines in its quest to discover, translate, and disseminate new knowledge critical to understanding the impact of environmental factors on individuals and human populations, a goal that is central to public health. Paramount to our mission is a commitment to the education and training of public health professionals to solve environmental health challenges ranging in scale from molecular to global.

DEPARTMENTAL OVERVIEW

The Department of Environmental Health Sciences is concerned with the adverse influence of the environment on human health and with controlling these influences. In this regard, the Department considers "environment" in its broadest sense, including the natural, built, and social environments. Here, the natural environment is that part of our physical environment not created by humans, while the built environment is that part of our physical environment created by our activities. The social environment includes factors other than physical processes, such as community socioeconomic status, social integration, neighborhood safety, or level of political empowerment.

Traditionally, the field of environmental health sciences has focused on hazardous agents in the environment, including biological, chemical, and physical agents. The Department of Environmental Health Sciences (EHS) engages in a number of activities within this tradition, including studies of the sources and environmental distribution of such agents; human exposure to such agents; the body's response at the molecular, cellular, organ system, and whole-body levels; and environmental risk assessment, prevention and intervention strategies, including environmental engineering, law, policy, and communications solutions.

New thinking on the environment and health has encouraged us to consider how the "built" environment influences human health and health-related behaviors beyond the traditional focus on hazardous agents. For example, urban sprawl, clearly an emergent environmental issue, has been linked to asthma, cardiovascular disease, and obesity risks; it also influences physical activity and other health-related behaviors. The social environment influences how socio-economic and other social interactions among people can directly affect health and also modify the risks associated with traditional hazardous agent exposures.

We are also pursuing research on the health effects of global environmental change, including those due to global warming, persistent organic pollutants, and ecosystems change.

EHS is one of ten departments in the Bloomberg School of Public Health. Because of the broad, multidisciplinary nature of our field, we are one of the largest departments in the School. We also represent one of the five core areas of public health specified by the Council on Education for Public Health. Paramount to our mission is a commitment to the education and training of public health researchers and professionals to solve environmental health challenges – ranging in scale from molecule to organism to the globe.

Students in EHS come from diverse backgrounds, and pursue a deeper understanding of the effects of the natural, built, occupational, and social environments on human health. EHS strives to create a collaborative and supportive learning atmosphere for every student. In an effort to maintain this atmosphere, EHS has a student organization that is active within the Department, the School, and the community. For more detailed information on departmental resources and programs, visit: ***www.jhsph.edu/dept/ehs***.

ACADEMIC DIVISIONS

The diversity of the Department lies within its four divisions:

- Environmental Health Engineering
- Occupational and Environmental Health
- Physiology
- Toxicology

This divisional organization offers our students many exceptional opportunities for course selection, research, and training in an environment that enables our students to follow a wide-range of environmental health science interests.

QUALIFICATIONS FOR ADMISSION

All applicants are expected to submit a completed application and supporting documentation as required by the Bloomberg School's Admissions Services. All EHS master's and doctoral applicants must have at least a baccalaureate degree in a relevant field. This usually means a focused undergraduate program in biology, chemistry, physics, engineering, or a broader undergraduate program in environmental sciences or public health. Application review is based on prior background and coursework, academic success, work history, statement of purpose, and three letters of recommendation. A critical consideration in the review process is the match between the applicant and the specific program within the Department. For doctoral candidates, the match between the applicant's specific interests and those of the faculty is also evaluated. GREs and other standardized test scores are required of applicants unless noted otherwise in the program description. For applicants whose native language is not English, scores from the TOEFL or IELTS exam are required. Each program has specific admissions requirements, which are noted in the individual program sections on our website: ***http://www.jhsph.edu/dept/ehs/people/prospective_students/index.html.***

The priority deadline for doctoral applications is December 15. Applications received by the priority deadline will be given first consideration for recruitment events and funding opportunities. Admissions decisions and financial awards are usually made by the end of March. Applications to the master's programs are requested by June 1 but will be considered throughout the year. Applicants to the MHS in Occupational and Environmental Hygiene program who would like to be considered for partial funding should apply by February 1. Applications for the BA/MHS degree are due by July 1 between the junior and senior year. Admission decisions for the BA/MHS program must be made before the start of the senior year.

Please contact the EHS Academic Program Manager at 410-955-2212 or Admission Services at ***www.jhsph.edu/admissions*** for more information.

FACULTY RESEARCH INTERESTS

Jacqueline Agnew, MPH, PhD
Professor of Occupational Health Sciences
Occupational health, environmental health, aging, ergonomics, neurotoxins, occupational stress, injury.

Steven S. An, PhD
Assistant Professor of Physiology
Respiratory diseases, asthma, airway smooth muscle, and cytoskeleton.

Daniel J. Barnett, MD, MPH
Assistant Professor of Occupational and Environmental Health
Public health emergency preparedness; all-hazards; risk communication; risk perception; public health workforce training; public health exercises; public health response; local; disaster mental health; best practices; Haddon matrix; terrorism; pandemic influenza.

Shyam Biswal, PhD
Associate Professor of Toxicology
Cigarette smoke, lung diseases, inflammation, cancer, genomics, proteomics, COPD, emphysema, asthma, sepsis, environmental genomics, stress response.

Joseph P. Bressler, PhD
Associate Professor of Toxicology
Environmental Health Sciences, blood brain barrier, lead, iron, transporters, neurodevelopment

Patrick N. Breysse, PhD, MHS
Professor and Director of Environmental Health Engineering
Environmental Health Sciences, industrial hygiene, exposure assessment, magnetic fields, asbestos, fiberglass, air pollution, asthma, environmental epidemiology.

Robert Brown, MD, MPH
Professor of Physiology
Structure-function relationship of pulmonary airways and vessels; reactive airway disease.

Maureen Farrell Cadorette, PhD, MPH, RN
Assistant Scientist of Occupational and Environmental Health
Occupational and environmental health, DOE Former Workers Programs, occupational and environmental health nursing, thyroiddisfunction and work.

Srinivasan Chandrasegaran, PhD, MS
Professor of Physiology
Restriction enzymes, chimeric nucleases, targeted recombination, zinc finger nucleases, targeted gene correction and disruption, homologous, recombination.

Frank C. Curriero, PhD
Assistant Professor of Environmental Health Engineering
Biostatistics mapping, Environmental epidemiology Point pattern analysis, Environmental exposure assessment Spatial cluster analysis, Geographic Information System (GIS) Spatial Statistics, Geostatistics Statistics.

Arthur M. Dannenberg, Jr., MD, PhD
Professor of Environmental Health Sciences
Tuberculosis, BCG, sulfur mustard, cytokines, adhesion molecules, allergic dermatitis, macrophages and lymphocytes, cell mediated immunity (CMI), delayed-type hypersensitivity (DTH).

DeLisa Fairweather, PhD
Assistant Professor of Toxicology
Aflatoxin, allergy, autoimmune disease, cardiovascular disease, cigarette smoke, dilated cardiomyopathy, heart failure, immunology, immunotoxicology, inflammation, innate immunity, macrophages, mast cells, myocarditis, particulate matter, pollution, sex differences, toxicology, toxins, virology.

Robert Fitzgerald, PhD, MA
Professor Physiology
Carotid body, chemotransduction, cardiopulmonary control, acetylcholine, catecholamines, gene-based differences in ventilator response to hypoxia and in morphology/function of the carotid body.

Sheila T. Fitzgerald, PhD, MSN
Associate Professor of Occupational and Environmental Health
Occupational health, occupational stress, the built environment, cardiovascular disease, adolescence, obesity, disability.

Alison S. Geyh, PhD
Associate Professor of Environmental Health Engineering
Airborne contaminants, health effects, source identification, chemical composition, metal content, particulate matter, ozone, World Trade Center, exposure assessment.

Alan M. Goldberg, PhD
Professor of Toxicology
Environmental Health Sciences, toxicology, humane science, in vitro.

John D. Groopman, PhD
Anna M. Baetjer Professor and Chair of Environmental Health Sciences
Chemical carcinogenesis; environmental carcinogenesis; chemoprevention; cancer prevention and control.

Thomas Hartung, MD, PhD
Professor of Toxicology
Director of the Center for Alternatives to Animal Testing
Accelerating the alternative methods validation process; promoting the use of in vitro test methods that focus on human rather than animal biology.

George J. Jakab, PhD
Professor of Occupational and Environmental Health
Cellular biology of the lung with emphasis on the phagocytic and regulatory role of the alveolar macrophages and the immune mechanisms of the lung parenchyma.

Norma Kanarek, PhD, MPH
Associate Professor of Environmental Health Sciences
Public health practice, public health performance, surveillance, tracking, community health, community health assessment, applied epidemiology.

Thomas W. Kensler, PhD
Professor of Toxicology
Environmental Health Sciences, chemical carcinogenesis, chemoprevention, hepatocarcinogenesis, reactive oxygen, antioxidants, enzyme induction, aflatoxin, oltipraz, chlorophyllin, sulforaphane, Keap1, Nrf2, triterpenoids.

Robert S. Lawrence, MD
Edyth H. Schoenrich Professor of Preventive Medicine
Director of the Center for a Livable Future
Environmental impacts of industrial agriculture, Food Security, Health and Human Rights.

Peter Lees, PhD
Professor and Director of Environmental Health Engineering
Industrial Hygiene, occupational and environmental hygiene, exposure assessment, retrospective exposure assessment, surface contamination, dermal exposure, synthetic vitreous fibers, chromium.

Jonathan Links, PhD
Deputy Chair of Environmental Health Sciences
Professor of Toxicology
Imaging, dosimetry radiation, dirty bombs, OpenCourseWare, nuclear medicine, radiological terror, preparedness.

Paul A. Locke, DrPH, JD
Associate Professor of Toxicology
Animal testing alternatives, environmental law, humane science, public health law, radiation, radioactive waste, risk assessment.

Wayne Mitzner, PhD
Professor and Director of Physiology
Environmental Health Sciences, asthma, emphysema, lung, airways, air pollution, angiogenesis, pathology, smooth muscle.

Ana Navas-Acien, MD, PhD
Assistant Professor of Occupational and Environmental Health
Environmental epidemiology, cardiovascular epidemiology, epidemiologic methods, systematic reviews, biomarkers, arsenic, cadmium, lead, heavy metals, secondhand tobacco smoke.

Cindy L. Parker, MD, MPH
Assistant Professor of Occupational and Environmental Health
Global environmental change, climate change, global warming, sustainable development, after peak oil, peak petroleum, risk communication, air quality, water quality, water quantity, deforestation.

Sekhar P.M. Reddy, PhD, MSc
Professor of Physiology
Environmental pollutants, lung injury and repair, bronchial carcinogenesis, cigarette smoke, oxidants and antioxidants, hyperoxia, gene regulation, transcription factors, AP-1, Nrf2, signal transduction.

Kellogg J. Schwab, PhD
Associate Professor of Environmental Health Engineering
Environmental microbiology, microbial fate and transport, water quality, drinking water treatment, disinfection, groundwater, wastewater, sewage, water and wastewater distribution systems, gastroenteritis, diarrhea, enteric pathogens, parasites (Cryptosporidium, Toxoplasma, Giardia), viruses (norovirus, norwalk-like viruses, hepatitis A virus, rotavirus), bacterial indicators of water quality, bacteriophage, antibiotic resistant bacteria, molecular detection of microorganisms (PCR, RT-PCR, hybridization), infectious diseases, microbial risk assessment, food borne and waterborne outbreak investigations, urban environmental pollution, airborne microorganisms, concentrated animal feeding operations (CAFO), Chesapeake Bay research, shellfish.

Brian S. Schwartz, MD, MS
Professor of Occupational and Environmental Health
Biologic markers, built environment, climate change, cognitive function, gene-environment interaction, genetic susceptibility, lead intoxication, molecular epidemiology, occupational epidemiology, occupational safety and health, peak oil, retrospective assessment of exposure, solvents, tetra ethyl lead.

Machiko Shirahata, MD, MDSc
Professor of Physiology
Acetylcholine, carotid body, hypoxia, oxygen, nicotinic receptor, patch clamp, sleep apnea.

Ellen Silbergeld, PhD
Professor of Environmental Health Engineering
Antibiotic-resistant bacteria, lead, mercury, immunotoxicology, neurotoxicology, environment.

Ernst Wm. Spannhake, PhD
Professor of Physiology
Respiratory epithelium, airborne pollutants, ozone, nitrogen dioxide, particulate matter, rhinovirus, influenza, respiratory syncytial virus (RSV), oxidant stress pathways, immune responses, inflammation, inflammatory and immune mediators.

Paul T. Strickland, PhD, MS
Professor and Director of Occupational and Environmental Health
Molecular biomonitoring of genotoxic agents and genetic polymorphisms associated with their metabolism, carcinogen metabolites and genetic damage in human populations, molecular epidemiology.

Clarke G. Tankersley, PhD
Associate Professor of Physiology
Environmental Stress Physiology, Mouse Genetics, Cardiopulmonary Physiology Linkage, Analysis, Control of Ventilation, Genetic Susceptibility, Air Pollutant Toxicology, Genetic Obesity.

Michael A. Trush, PhD
Professor of Toxicology
Bone marrow, benzene, polycyclic aromatic hydrocarbons, reactive oxygen, chemiluminescence assessment of cellular reactive oxygen, reactive oxygen-mediated signal transduction, myeloid cell differentiation, mitochondria.

Virginia M. Weaver, MD, MPH
Associate Professor of Occupational and Environmental Health
Cadmium nephrotoxicity, environmental nephrotoxicants, genetic susceptibility factors (δ-aminolevulinic acid dehydratase [ALAD], vitamin D receptor [VDR]), angiotensin I-converting enzyme [ACE], and endothelial nitric oxide synthase [eNOS]), lead nephrotoxicity , medical surveillance, molecular epidemiology, N-acetyl-β-D-glucosaminidase (NAG), retinol-binding protein (RBP)

James D. Yager, PhD
Professor of Toxicology and Senior Associate Dean for Academic Affairs
Estrogens, estrogen metabolism, catechol-O-methyltransferase (COMT), catechols, estrogen receptor, mitochondria, carcinogenesis, liver cancer, breast cancer, genetic polymorphisms, Training Program in Environmental Health Sciences, Toxicological Sciences, Environmental Health Sciences.

Joanne Zurlo, PhD
Senior Scientist of Toxicology
Mechanistic in vitro toxicology; reduction, refinement and replacement of animal use in biomedical research and testing.

MASTER'S PROGRAMS

MASTER'S PROGRAMS

PROGRAM DESCRIPTION

The Department of Environmental Health Sciences offers two master's degree programs: the academic Master of Health Science in Environmental Health and the professional Master of Health Science in Occupational and Environmental Hygiene. These programs are designed to address the educational and training needs of students within the broad range of disciplines in the field of environmental health, as described below.

ADVISORS

All new students enrolled in the master's program will be assigned an advisor before their arrival. The advisor serves as the primary contact for the Department and will assist the student with course selection each term, preparation of their essay and presentation, and the interpretation of departmental and School policies. The student is free to change advisors, but this change must be approved by the appropriate program director and the Department's Academic Program Manager must be notified.

Students are required to review the current term's registration details with their advisor before the end of the add/drop period each term (see: ***www.jhsph.edu/academics/calendar***).

TIMELINE

Most students in the academic MHS in Environmental Health complete their degree on a full-time basis within four academic terms (nine months). Additional terms of study are allowed as long as the student is making satisfactory academic progress. The professional MHS in Occupational and Environmental Hygiene program requires an internship and typically requires six terms (a year and a half of study) when taken on a full-time basis. Students in either program who choose to attend on a part-time basis may take up to three academic years to complete their program. All MHS students should notify the appropriate program director and the Academic Program Manager if they are not able to maintain continuous registration status.

ASSESSMENT OF PROGRESS

Each term the student and their advisor will review grades from the previous term. Specific goals will be determined following this review. A student who is experiencing academic difficulty will be notified in writing if they are expected to achieve a specific GPA during a term.

Students must meet minimum academic standards to remain in the MHS Program. Failure to meet any of the criteria below is grounds for dismissal from the program.

- To maintain good academic standing, a student must maintain a minimum of 2.50 cumulative grade point average. Students falling below 2.50 will have one term, or 16 additional units of coursework, to raise the GPA above 2.50.

- Students must maintain a grade of "C" or better in all required courses in the core curriculum that are offered for a letter grade.

- If a student receives a grade of "D" or "F" twice in the same required course, they may not repeat the course a third time. If the course is a required core course with no other options, that is grounds for dismissal.

BA/MHS PROGRAM

Undergraduate students currently enrolled in the Johns Hopkins University Krieger School of Arts and Sciences program in Public Health have a unique opportunity to receive both bachelor's and master's degrees.

The Johns Hopkins Bloomberg School of Public Health Department of Environmental Health Sciences offers early graduate school admission to students enrolled in this undergraduate program. Applications for the BA/MHS degree must be submitted by July 1 between the junior and senior years to ensure completion of the review process prior to the first day of the academic year. Students must be accepted before the start of their senior year. Standardized test scores are not required for application to the BA/MHS program. A waiver of the requirement for these scores for matriculation into the MHS will be granted to students who achieve a GPA of 3.0 or better in Public Health coursework taken at SPH during their senior year while in the BA/MHS. Both master's programs, MHS in Environmental Health and MHS in Occupational and Environmental Hygiene, participate in the BA/MHS degree but the applicant must specify one of these programs on the application. The application fee is waived for BA/MHS applicants.

The graduate credits taken at the Bloomberg School of Public Health while in the BA/MHS apply toward the BA and one half of these (up to 16 credits) may also be used to fulfill MHS degree requirements. Students in this program will receive co-advising from both schools to optimize their academic experience. Additional information about this program may be found in the Johns Hopkins University Krieger School of Arts and Sciences catalog.

MHS IN ENVIRONMENTAL HEALTH

PROGRAM DESCRIPTION

The academic Master of Health Science program in Environmental Health provides a systematic introduction to environmental health sciences. The program is intended for talented baccalaureate graduates who have a special interest in environmental health and who wish to develop a foundation upon which to base further education and the application of environmental health principles in their long-term career goals. Graduates have pursued higher degrees in various areas of public health and medicine and, while the program is not specifically intended to prepare students for employment, others have taken positions with government and nonprofit agencies and in the private sector. The program is also designed to meet the needs of experienced government or private sector employees who desire to become more qualified in environmental factors involved in health and disease.

Specialization of coursework in the areas of human toxicology and pathophysiology, population environmental health, and sustainability and global environmental health are available. All MHS graduates will have competence in the following areas: basic biological mechanisms; toxicology; statistical evaluation of data; epidemiological studies in environmental health; legal and regulatory issues in environmental health; and occupational or environmental disease from either an engineering or medical perspective. In addition to successful completion of coursework, MHS students are required to prepare an essay addressing an environmental health problem and to make a formal presentation on the topic to an audience of faculty and students. No written or oral comprehensive examination is required for the MHS degree. The program also offers a part-time option, taking advantage of those courses that are offered on-line. The part-time program has the same requirements as the full-time option.

PROGRAMS OF STUDY

Students work in consultation with faculty advisers to select a program of study that best encompasses their area of primary interest and fits with their career goals. Required core courses address topics that include environmental health, toxicology, physiology, epidemiology, risk sciences, and biostatistics. The Department offers three Specialty Tracks of study. These tracks provide students the opportunity to complete a sequence of courses that present an optimal learning experience in selected areas of environmental health that are of special importance in the field. MHS students also have the opportunity to fulfill the requirements necessary to earn either the Certificate in Risk Sciences and Public Policy or the Certificate in Humane Sciences and Toxicology Policy, in addition to the MHS degree. At the end of the program academic year, students may chose to sit for the exam to become Certified in Public Health (CPH) through the National Board of Public Health Examiners. Depending upon previous knowledge, these students may wish to consider taking, in addition to Core and Track Requirements, one introductory course each in Health Policy & Management and Social & Behavioral Sciences.

Each of the Specialty Tracks comprises a body of coursework that is unique to the focus of that track, as described above, and provides the additional course units necessary to achieve the 64 unit minimum needed for graduation. In addition to the Program-Required Core courses listed below, each Specialty Track is composed of a set of Track-Required courses, on the following pages. Electives relevant to student interests comprise the remainder if the 64 unit minimum.

Specialty Track in Human Toxicology and Pathophysiology

The Specialty Track in Human Toxicology and Pathophysiology is designed for students whose interests lay in laboratory-oriented approaches to the study of chemical and biological agents in the environment that affect health and the mechanisms through which they do so. Building upon the required introductory course in toxicology, specialty courses include two each in advanced toxicology, environment-related disease and laboratory-based biostatistics.

Options include completing requirements for either the Risk Sciences or Humane Sciences certificates. Through lectures, discussion and class assignments, students in this track will develop a solid understanding of the ways in which environmental exposures can translate into health risks and the ways in which these risks can be evaluated and mitigated. Ideal applicants to this track will be individuals with strong backgrounds in the basic sciences, including biology and chemistry.

Specialty Track in Population Environmental Health

The Specialty Track in Population Environmental Health builds upon the broad population views of the program-required courses in epidemiology and environmental health principles. It is designed for students whose interests in the basic sciences extend toward the community and social aspects of the impact of environmental factors on health. Specialty track courses include those that present issues and interventive approaches from the population perspective and require participation of students in community outreach activities. The Risk Sciences series may also be completed.

The Specialty Track in Population Environmental Health has two options differing in the biostatistics coursework required. The recommended track, which comprises a three-term sequence, is for those who wish to master the use of the primary statistical approaches and develop the quantitative skills used in epidemiologic research. The second is for students whose interests might only include the need to interpret and critically evaluate study designs and analytical methods presented in the literature. Through coursework and direct participation, students will develop an understanding of the nature of the problems that affect subsets of the population and the challenges faced in their solution. Ideal applicants to this track will be individuals with a strong basic science foundation and an interest in population-related environmental health issues.

Specialty Track in Sustainability and Global Environmental Health

The Specialty Track in Sustainability and Global Environmental Health is designed for students who wish to develop an understanding of the factors that are driving current changes in the global environment and how their consequences affect human health at the individual and population levels. Students will be exposed to a broad range of topics that are traditionally not in the domains of public health, such as urban planning, transportation policy, energy policy and

technology, landscape architecture, and the green building movement. These will be combined with public health skills so that students can critically analyze the challenges and offer a variety of solutions.

Through coursework and seminars, students will learn how choices in the use of land, water, and energy to support transportation systems, food production and distribution, and a growing population impact the environment on local, regional, and global scales. Students will learn why energy prices have been steadily rising, and the evidence for the conclusion that the era of cheap and plentiful energy may be over; and how the implications of this for public health are myriad and serious. Climate change, loss of biodiversity, ecosystem degradation and the depletion of other global resources will be considered in the context of their impact on health on a global scale, and what visions for a sustainable future may look like. Depending upon student goals, the two aforementioned options for biostatistics training are offered. The curriculum includes an option for participation in a sustainability project within the local community.

GRADE AND PROGRAM REQUIREMENTS

As a requirement of the MHS in Environmental Health degree program, the student must write an essay and present the information during a formal seminar. No written or oral comprehensive examination is required for this degree. The MHS essay is intended to serve as an integrating experience for the students. The content is based on an environmental health problem that is pertinent to the educational goals of the student and approved by the adviser. Insofar as the topic allows, the essay must synthesize, to varying extents, information across the spectrum from basic toxicology through exposure assessment and policy.

The essay should represent a substantive application of analytic and technical skills in reviewing, exploring, and (possibly) solving a problem pertinent to environmental health. It is not a research paper or thesis, but rather an informative literature review and case study presentation of a topic of interest to the student. It should thus represent some synthesis of the background of the student with a new understanding of environmental health issues. The essay should be at least 30 pages in length, with at least 30 peer reviewed journal article references. All students must register for three terms of 180.860, Special Studies MHS Essay, corresponding to the last three terms leading to completion of their program requirements – typically 2nd, 3rd, and 4th Terms.

The student will meet with the adviser throughout the essay-writing process in order to ensure fulfillment of 180.860 essay requirements, as well as assure that the essay is properly prepared for presentation and final approval. Ultimately, the essay must be reviewed and approved by the adviser and one other faculty member or expert chosen by the student and approved by the adviser.

Students must maintain a GPA of 2.50 while in the program and in order to graduate. The program must be completed within three years.

TIMELINE

Essay Timeline

It is essential that the MHS essay be prepared in a timely manner, so that faculty can provide comments that can be incorporated into the final essay. During the year, certain milestones must be met in preparing the essay, as follows:

Mid-November
Draft outline to adviser/feedback provided

Mid-December
Outline approved
(required for satisfactory completion of 2nd Term 180.860 Special Studies)

Mid-January
First draft of essay given to the advisor/feedback provided

Mid- to Late February
Second draft of essay given to advisor; feedback provided

Mid-March
"Final" version of essay given to advisor
(required for satisfactory completion of 3rd Term 180.860 Special Studies

Early April
Essay approved by advisor and sent to one other faculty or expert reader

Mid-April
Corrections to essay based on reader's comments

End of April *(specific date will be announced)*
Advisor and one other faculty or expert reader approve essay; Program Director notified by advisor. (required for satisfactory completion of 4th Term 180.860 Special Studies and for graduation)

Early May
Essay Presentation

Partial fulfillment of the MHS degree requirements for this program requires the student to make at least one presentation to an audience of faculty and students of the Department. This presentation will be based on the student's essay topic, and will typically be held after completion of the written essay. This presentation will strengthen the student's skills in organizing and presenting specific information. There are no exceptions to the submission of the essay or delivery of the presentation.

Department of Environmental Health Sciences
Academic MHS in Environmental Health - Academic Year 2010-11
Core Curriculum Requirements

Program-Required Core Courses

Course Number	Course Name	Day/Time	Term	Units
180.609	Principles of Environmental Health I	MW 1:30 - 3:20	1	4
180.610	Principles of Environmental Health II	TTh 8:30 - 10:20	2	4
180.860	Special Studies MHS Essay	TBA	2, 3, and 4	2
183.631	Fundamentals of Human Physiology **	MW 1:30 - 3:20	2	4
187.610	Public Health Toxicology **	WF 3:30 - 4:50	1	4
317.600	Introduction to the Risk Sciences and Public Policy **	MW 5:00 - 6:30	1	3
340.601	Principles of Epidemiology	MWF 8:30 - 9:20 *	1	5
A two-term (minimum) Biostatistics course sequence. ***(Example: 140.611/12 or 140.615/15 or 140.621/22/23 * series)***				

School-Required Courses

The following courses fulfill the School requirement for all research students. MHS in Environmental Health students must also fulfill these requirements.

Course Number	Course Name	Day/Time	Term	Units
306.665	Research Ethics and Integrity: U.S. and International Issues ***OR***	TTh 1:30 - 2:50	3	3
550.860	Research Ethics *(offered each term)*	Online	1	1
550.865	Public Health Perspectives on Research	Online	2	2
	Academic Ethics Module +	Online		

*** Check current schedule for all course and/or lab times:**

http://commprojects.jhsph.edu/courses

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free " *Introduction to Online Learning* " course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

+ In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Department of Environmental Health Sciences
MHS in Environmental Health - Academic Year 2010-11
Specialty Track in Human Toxicology and Pathophysiology

Track Specific Requirements

Course Number	Course Name	Day/Time	Term	Units
140.615	Biostatistics for Laboratory Scientists I	MWF 10:30 - 11:20	3	4
140.616	Biostatistics for Laboratory Scientists II	MWF 10:30 - 11:20	4	4
183.641	Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	4	3
187.632	Toxicology: The Molecular Basis	MWF 10:30 - 11:50	2	4
187.620	Environmental Toxicological Pathology	WF 3:00 - 4:50	4	4
187.630	Bioanalytical Toxicology (*Note: Instructor Consent Required)*	TTh 10:30 - 11:50	3	4
187.641	Immunology of Environmental Disease	MW 1:30 - 2:50	4	3
187.661	Environmental Health in Neurological and Mental Disorders	TTh 10:30 - 11:50	4	3

Elective Examples

To earn the Risk Sciences and Public Policy certificate:

Course Number	Course Name	Day/Time	Term	Units
317.605	Methods in Quantitative Risk Assessment	MW 5:00 - 6:30	3	4
317.610	Risk Policy, Management and Communication **	MW 5:00 - 6:30	2	3
317.615	Topics in Risk Assessment	M 5:00 - 6:30	4	2

To earn the Humane Science and Toxicology Policy certificate:

Course Number	Course Name	Day/Time	Term	Units
187.625	Animals in Research: Law, Policy and Humane Sciences **	T 3:30 - 5:20	4	2
187.650	Alternative Methods in Animal Testing	Online	4	3
306.665	Research Ethics and Integrity: U.S. and International Issues **~**	TTh 1:30 - 3:20	3	3

Additional Electives:

Course Number	Course Name	Day/Time	Term	Units
188.860	Tutorial in Tissue Injury, Inflammation, and Repair *(Note: Every **third** year)*	W 3:30 - 4:50	4	3
260.622	Principles of Bacterial Infection *(Note: Every **third** year)*	TTh 3:30 - 4:50	4	3

~ Substitutes for School-required 550.860 Research Ethics (1 unit) for these certificate students

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free " *Introduction to Online Learning* " course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

Department of Environmental Health Sciences
MHS in Environmental Health - Academic Year 2010-11
Specialty Track in Population Environmental Health

Track Specific Requirements

Course Number	Course Name	Day/Time	Term	Units
140.621	Statistical Methods in Public Health I ***AND***	TTh 10:30 - 11:50	1	4
144.622	Statistical Methods in Public Health II ***AND***	TTh 10:30 - 11:50	2	4
140.623	Statistical Methods in Public Health III ***OR***	TTh 10:30 - 11:50	3	4
140.611	Statistical Reasoning in Public Health I ***AND***	TTh 10:30 - 11:50	1	3
140.612	Statistical Reasoning in Public Health II	TTh 10:30 - 11:50	2	3
180.880	Special Studies: Environmental Health Outreach (Classroom)	T 4:00 - 6:00	Must be taken in Term 3	2
340.608	Observational Epidemiology	MWF 9:00 - 9:50	2	4
340.763	Professional Epidemiologic Methods I	MW 9:00 - 9:50 ***AND*** F 9:00 - 11:20	3	3
182.638	Environmental and Health Concerns in Water Use and Reuse	WF 8:30 - 10:20	4	4

Plus two of the following:				
140.662	Spatial Analysis and GIS I	TTh 1:30 - 2:50	3	3
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 3:00 - 4:20	3	4
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
182.626	Issues for Water and Sanitation in Tropical Environmental Health	T 8:30 - 10:20	3	2

Elective Examples

To earn the Risk Sciences and Public Policy certificate:

Course Number	Course Name	Day/Time	Term	Units
317.610	Risk Policy, Management and Communication	MW 5:00 - 6:30	2	3
317.605	Methods in Quantitative Risk Assessment	MW 5:00 - 6:30	3	4
317.615	Topics in Risk Assessment	M 5:00 - 6:30	4	2

Elective Examples (continued)

340.627	Epidemiology of Infectious Diseases	MWF 3:30 - 5:20	2	4
140.663	Spatial Analysis and GIS II	TTh 1:30 - 2:50	4	3
180.611	The Global Environment and Public Health	TTh 8:30 - 10:20	1	4
223.682	Clinical and Epidemiologic Aspects of Tropical Diseases	TTh 1:30 - 2:50	4	3
180.880	Special Studies: Environmental Health Outreach (Field Experience)	T 4:00 - 6:00	Best taken in Term 4	1 - 3
180.620	Food Production, Public Health and the Environment	Online	2	4
188.680	Fundamentals of Occupational Health **	TTh 3:30 - 4:50	1	3
220.601	Introduction to International Health **	TTh 1:30 - 3:20	1	4

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free "*Introduction to Online Learning*" course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

Department of Environmental Health Sciences
MHS in Environmental Health - Academic Year 2010-11
Specialty Track in Sustainability and Global Health

Track Specific Requirements

Course Number	Course Name	Day/Time	Term	Units
140.611	Statistical Reasoning in Public Health I ***AND***	TTh 10:30 - 11:50	1	3
140.612	Statistical Reasoning in Public Health II ***OR***	TTh 10:30 - 11:50	2	3
140.621	Statistical Methods in Public Health I ***AND***	TTh 10:30 - 11:50	1	4
144.622	Statistical Methods in Public Health II ***AND***	TTh 10:30 - 11:50	2	4
140.623	Statistical Methods in Public Health III	TTh 10:30 - 11:50	3	4
180.655	Baltimore Food Systems: Urban Food Environment	TTh 1:30 - 3:20	3	4
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
180.611	Global Environmental Health	TTh 8:30 - 11:20	1	4
180.620	Food Production, Public Health and the Environment	Online	2	3
180.651	Energy Policy Choices and Public Health	M 1:30 - 3:20	3	2
180.880	Special Studies: Environmental Health Outreach (Classroom)	T 4:00 - 6:00	Must be taken in Term 3	2
182.638	Environmental and Health Concerns in Water Use and Reuse	WF 8:30 - 10:20	4	4
182.682	Buildings, Land Use, Transportation and Public Health	F 1:30 - 3:20	4	2
188.688	Global Sustainability Seminar	W 12:00 - 1:20	2 and 4	2

Elective Examples

Course Number	Course Name	Day/Time	Term	Units
180.604	Introduction to Environmental Health Practice	TTh 10:00 - 11:50	4	4
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
180.880	Special Studies: Environmental Health Outreach (Field Experience)	T 4:00 - 6:00	Best taken in Term 4	1 - 3

Note: Courses offered online require students to establish an eLearning account and to complete the free " *Introduction to Online Learning* " course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

MHS IN OCCUPATIONAL AND ENVIRONMENTAL HYGIENE

Effective Term I 2010-2011, students who are currently in the MHS OEH program (full-time or part-time) may choose to pursue either the Master of Health Science (MHS) or the Master of Science in Public Health (MSPH) degree. These students should contact their program director for further information.

PROGRAM DESCRIPTION

The MHS in Occupational and Environmental Hygiene (OEH) Program is designed for students interested in developing or advancing professional careers in occupational and environmental risk assessment and management. This program is part of the Department's NIOSH-sponsored Occupational Safety and Health Education and Research Center. Graduates of the program are employed in consulting, private industry and/or government, and they are also prepared to pursue doctoral studies in environmental health sciences.

For students particularly interested in careers in occupational hygiene, the program is accredited by the Applied Science Accreditation Commission (ASAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; 410-347-7770 and is designed to prepare students for the Certified Industrial Hygienist (CIH) examination given by the American Board of Industrial Hygiene. Training in the program covers principles of risk assessment and management in the workplace and in the general environment. Coursework includes toxicology, epidemiology, biostatistics, occupational health, occupational and environmental hygiene, air pollution, environmental sampling techniques, exposure assessment, and program management, as well as risk assessment, risk management and risk communication.

INTERNET-BASED PROGRAM

The MHS in Occupational and Environmental Hygiene program offers a part-time, Internet-based program with courses offered online and during the School's Summer and Winter Institutes. The part-time program has the same requirements as the full-time option. Upon enrollment, students will work with their advisor to develop a course plan for completion of the degree.

GRADE AND PROGRAM REQUIREMENTS

As a requirement of the MHS in OEH program, each student must write a culminating essay and present the information in a formal seminar. The MHS Essay is intended to serve as an integrating experience for the students. The content is based on an occupational or environmental health problem that is pertinent to the educational goals of the student and approved by the advisor. The essay is usually a work product that results from an internship or employment experience. The essay represents a substantive application of professional technical skills through the process of collecting and summarizing data and reviewing appropriate literature. Where possible, students are encouraged to pursue projects that can lead to a publishable manuscript.

INTERNSHIPS

This program requires six academic terms to complete and includes a three-month internship. The internship is designed to provide professional experience tailored to the needs and interests of each student. During the internship, the student is expected to assume independent responsibility for a project, which is described in a culminating paper that serves as a review of the entire educational experience. Results from the internship project and an overall review of the educational experience are also presented orally to an audience of faculty and students.

Department of Environmental Health Sciences
MHS in Occupational and Environmental Hygiene - Academic Year 2010-11
Core Curriculum Schedule - Year 1

First Term

Course Number	Course Name	Day/Time	Units
140.621	Statistical Methods in Public Health I	TTh 10:30 - 11:50 *	4
182.840	Special Studies/Research EHE	TBA	1
187.610	Public Health Toxicology **	WF 3:30 - 4:50	4
188.680	Fundamentals of Occupational Health **	TTh 3:30 - 4:50	3
340.601	Principles of Epidemiology	MWF 8:30 - 9:20 *	5

Second Term

Course Number	Course Name	Day/Time	Units
140.622	Statistical Methods in Public Health II	TTh 10:30 - 11:50 *	4
182.621	Introduction to Ergonomics	F 8:30 - 11:50	4
182.625	Principles of Occupational & Environmental Hygiene **	TTh 1:30 - 3:20	4
182.840	Special Studies/Research EHE	TBA	1
183.631	Fundamentals of Human Physiology **	MW 1:30 - 3:20	4

Third Term

Course Number	Course Name	Day/Time	Units
140.623	Statistical Methods in Public Health III	TTh 10:30 - 11:50 *	4
182.614	Industrial Hygiene Laboratory	WF 1:30 - 4:50	5
182.623	Occupational Safety & Health Management	M 1:30 - 3:50	3
182.840	Special Studies/Research EHE	TBA	1
	Electives		

Fourth Term

Course Number	Course Name	Day/Time	Units
180.628	Introduction to Environmental and Occupational Health Law	Online	4
182.615	Airborne Particles	F 9:30 - 11:50	3
182.622	Ventilation Controls	F 1:00 - 5:20	4
182.840	Special Studies/Research EHE	TBA	1
188.681	Occupational Health	M 8:30 - 11:50 ***AND*** W 8:30 - 4:50	5

Summer Internship (No registration required.)

(continued on next page)

Department of Environmental Health Sciences
MHS in Occupational and Environmental Hygiene - Academic Year 2010-11
Core Curriculum Schedule - Year 2

First Term (Fifth term of program)

Course Number	Course Name	Day/Time	Units
182.631	Principles of Occupational Safety	F 1:30 - 3:20	2
182.840	Special Studies/Research EHE or Electives	TBA	10
182.840	Special Studies/Research EHE	TBA	1
317.600	Introduction to the Risk Sciences and Public Policy **	MW 5:00 - 6:30	3

Second Term (Sixth term of program)

Course Number	Course Name	Day/Time	Units
182.637	Noise and Other Physical Agents in the Environment **	WF 1:30 - 3:20	4
182.840	Special Studies/Research EHE or Electives	TBA	10
182.840	Special Studies/Research EHE	TBA	1
317.610	Risk Policy, Management and Communication **	MW 5:00 - 6:30	3

Suggested Electives for Occupational & Environmental Hygiene MHS Program

Course Number	Course Name	Day/Time/Term	Units
183.641	Health Effects of Indoor and Outdoor Air Pollution (*Note: Every other year)*	TTh 1:30 - 2:50 / Term 4	3
305.610	Issues in Injury and Violence Prevention	MW 3:30 - 4:50 / Term 1	2
340.618	Occupational Epidemiology *(Note: Every other year)*	TTh 1:30 - 2:50 / Term 4	4
410.613	Psychosocial Factors in Health and Illness	MW 1:30 - 2:50 / Term 3	3

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

**** Also offered Online**

In addition, all students are required to complete the Academic Ethics Module (on-line course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Note: It is permissible to take the online versions of Toxicology (187.610) and Physiology (183.631) in second and fourth terms, respectively, in place of the face-to-face versions offered in first and second terms. To do so, an eLearning account must be established and the online course, "*Introduction to Online Learning* " must be completed prior to the start of the term in which the first online course is taken. For available dates, see the course catalog at:

http://commprojects.jhsph.edu/courses

Department of Environmental Health Sciences
Part-time Online Master of Science in Public Health
Occupational and Environmental Hygiene - Academic Year 2010-11
Core Curriculum Schedule

Depending on previous experience and individual circumstances, coursework for the MSPH in OEH will require 2.5 years to complete. The required courses are listed by the academic term in which they are offered in the table below. Students have up to 4 years to complete the degree requirements. Upon enrollment, students will work with their advisor to develop a course plan for completion of the degree.

First Term (*online*)

Course Number	Course Name	Day/Time	Units
188.680	Fundamentals of Occupational Health	Online	3
140.611	Statistical Reasoning I		3
550.694	Fundamentals of Epidemiology I		3
182.623	Occupational Safety and Health Management		3
	Attend online Seminar in Occupational and Environmental Hygiene (one meeting per month)		

Second Term (*online*)

Course Number	Course Name	Day/Time	Units
187.610	Public Health Toxicology	Online	4
140.612	Statistical Reasoning II		3
550.695	Fundamentals of Epidemiology II		3
	Attend online Seminar in Occupational and Environmental Hygiene (one meeting per month)		

Winter Institute *(East Baltimore Campus)*

Course Number	Course Name	Day/Time	Units
182.631	Principles of Occupational Safety	TBA	2
140.613	Data Analysis Workshop I		2
140.614	Data Analysis Workshop II		2
182.615	Airborne Particles		3
182.619	Industrial Hygiene Laboratory II		3
182.620	Occupational Health I		2

Third Term *(online)*

Course Number	Course Name	Day/Time	Units
317.600	Introduction to the Risk Sciences and Public Policy	Online	3
182.621	Introduction to Ergonomics		4
182.637	Noise and Other Physical Agents in the Environment		4
	Attend online Seminar in Occupational and Environmental Hygiene (one meeting per month)		

Fourth Term *(online)*

Course Number	Course Name	Day/Time	Units
182.625	Principles of Occupational and Environmental Hygiene	Online	4
317.610	Risk Policy, Management, and Communication		3
183.631	Fundamentals of Human Physiology		4
180.628	Introduction to Environmental and Occupational Health Law		4
	Special Studies Seminar in Occupational and Environmental Hygiene (one meeting per month)		1

[#] 2 credit hours for Special Studies/Seminar (1 credit per year, registration takes place in Term 4).
† At least three credit hours for MSPH essay, which will be undertaken over several terms and completed at the end of the program.

(continued on next page)

Department of Environmental Health Sciences
Part-time Online Master of Science in Public Health
Occupational and Environmental Hygiene - Academic Year 2010-11
Core Curriculum Schedule (cont'd)

Summer Institute *(East Baltimore Campus)*

Course Number	Course Name	Day/Time	Units
182.622	Ventilation Controls	TBA	4
182.618	Industrial Hygiene Laboratory I		2
TBA	Occupational Health II		TBA
182.850	Special Studies Seminar in Occupational and Environmental Hygiene (one meeting per month)		3 †
	Culminating Seminars - Essay Presentation		

Total Program Credits **78 units**

[#] **2 credit hours for Special Studies/Seminar (1 credit per year, registration takes place in Term 4).**

† **At least three credit hours for Special Studies for MSPH essay, which will be undertaken over several terms and completed at the end of the program.**

***The student's advisor serves as course instructor for the following course: 182.850 - Special Studies Environmental Health Engineering MSPH Essay. Successful completion of this course is required for graduation from this program. The registration timeline for this course is decided between the student and their advisor.**

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:

https://apps2.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

DOCTORAL PROGRAMS

DOCTORAL PROGRAMS (PhD and DrPH)

The Department of Environmental Health Sciences awards the degrees of Doctor of Philosophy (PhD) and the School awards the Doctor of Public Health (DrPH). Students in the PhD program select from one of four areas to focus their academic studies and research: Environmental Health Engineering, Occupational & Environmental Health, Physiology, or Toxicology. DrPH students establish a personalized curriculum (an individual Academic Plan) based on the student's professional experience, future career, and goals. The research and dissertation orientations of the PhD and DrPH programs can be contrasted as follows:

PhD	DrPH
Emphasis on generating new science and advancing theory	*Emphasis on applying research to solve public health problems*
Contributions to laboratory and field methodology, data analysis	*Contributions to eliminating population risks from environmental hazards and improving public health practice*
Innovations in technology and experimental methods	*Innovations in environmental health interventions that prevent disease and eradicate hazards*
Career goals in research, academia	*Career goals in environmental health leadership, public health practice, academia*

EHS POLICY ON DOCTORAL REGISTRATION

Full-time - In addition to the School's residency requirement, full-time doctoral candidates in the Department of Environmental Health Sciences must register on a continuous basis for 16 units each academic term. Registration is not required during the summer or interim sessions and tuition funding is usually not provided for these terms.

> *Note: Some students will be registered by the department during the summer term for administrative purposes; however, this registration does not imply that didactic courses will be funded.*

Part-time - The DrPH program has an approved part-time status. These students must register on a continuous basis for a minimum of 1 unit per term. Registration is not required during the summer or interim sessions.

Should it become necessary to take a break from studies, students should contact their advisor and determine if a formal Leave of Absence is necessary. Any request for change of status must be submitted to the EHS Academic Program Manager and approved by the School and the Department under the guidelines outlined in the School's catalog.

All students are required to discuss the current term's registration with their advisor before the end of the Add/Drop period. Any doctoral student (full or part-time) who fails to register during the regular academic terms will be considered withdrawn by the School and the Department.

TIMELINE

Full-time

Full-time doctoral students have seven years from the time of matriculation to complete their degree requirements. However, it is expected that all doctoral students will have completed the program five years after matriculation. Student funding beyond five years is generally not available. Students who have been approved for a formal Leave of Absence (LOA) may extend this time. See School policy regarding LOA for details.

Part-time

Students in the approved part-time DrPH program have nine years from the time of matriculation to complete their degree requirements. Students who have been approved for a formal Leave of Absence (LOA) may extend this time. See School policy regarding LOA for details.

RESIDENCY REQUIREMENTS

A minimum of four consecutive terms, as a full-time, resident student, is required to fulfill the doctoral degree requirement for full time doctoral students. In most cases, the full-time requirement is fulfilled by registering for 16 credits each term. Students in the part-time DrPH program are exempt from this requirement.

Requests for exceptions for those in the full-time doctoral program should be approved by the academic advisor and forwarded to the EHS Academic Program Manager. Once approved by the Department, the request will be forwarded to the Committee on Academic Standards. The Committee on Academic Standards makes the final determination regarding all exemption requests.

REQUIREMENTS FOR COURSES OUTSIDE PRIMARY DEPARTMENT

The PhD program requires at least 64 credits of formal coursework. At least 18 credit units of formal coursework are required in courses outside the student's primary department. At least nine of these credits must be taken in the School of Public Health. A record of these courses will be maintained by the EHS Academic Program Manager. There is no minimum number of non-departmental courses or units specified for the DrPH program.

DOCTORAL FACULTY ADVISORS

Doctoral students are assigned a faculty advisor once they are admitted into a degree program. The advisor serves as the primary contact for the Department and will assist the student with course selection each term, planning research rotations if appropriate, preparation of journal club and divisional seminar presentations, and the interpretation of departmental and School policies. This initial, or academic, advisor may or may not become the student's research advisor. Toward the end of the second year, a thesis research advisor is selected to serve as the student's advisor for the conduct of their research. This selection, however, does not exclude significant interactions with other members of the faculty. The faculty advisor must approve student registration and course plans (as applicable). At the end of each academic year, the advisor and the student should review academic progress and determine plans for the future year that will keep the student on track toward graduation. This information is also reviewed by the student's doctoral program director and/or the Academic Program Manager. In the event that the student wants to change advisors, he/she must discuss the reasons with his/her program director and submit a request to the EHS Academic Program Manager. Such changes are entertained upon mutual agreement and availability of an appropriate advisor. Changes will be noted on the student's transcript.

USE OF ANIMAL SUBJECTS AND HUMANS

Before beginning contact with either human or animal subjects, doctoral students as all researchers, must obtain the appropriate approval for their projects from either the Institutional Review Board (IRB) or the Institutional Animal Care and Use Committee (IACUC). In both cases, the faculty mentor must be involved in this process in that the protocol for the research project is submitted under the faculty member's name with the student listed as a student investigator. It is important to remember that NO contact can be made with humans, human tissue, human samples or human records without prior approval of the protocol by the IRB. In addition, online training in the use of animals in research, human subjects research and HIPAA Privacy Rule must be completed. NO animals can be purchased for experimentation without an IACUC protocol approval.

ASSESSMENT OF PROGRESS

The School's minimum grade point average (GPA) requirement for doctoral students is 2.75, however, the various programs within the Department many impose more stringent guidelines which would be listed in the appropriate section of the handbook for that program.

In order to monitor and document adequate academic performance and progress, a review of the doctoral student's grades and activities is documented annually. This information is reviewed by the advisor, the doctoral program director and the Academic Program Manager. Information that has not been submitted to the EHS Academic Program Manager, such as research committee meetings or course completion documentation, is identified and added to the academic record before it is subjected to final review. If it is determined that the student has not adequately progressed in their program, the student and their advisor are notified and will be asked to submit a plan to resolve the problem. This plan must be reviewed and approved by the division or program director and Department Chair.

ATTENDANCE AND VACATION

Doctoral students are expected to attend all classes and participate actively, including journal club and seminars. Scheduling conflicts that arise must be discussed with the student's advisor. Since research is a fundamental part of the curriculum, it is expected that students will work in the laboratory, or pursue other research, including public health practice with the approval of the advisor during term breaks. Generally, students will take no more than two weeks vacation per academic year (University holidays are approved time off and are not included in the two weeks vacation). The advisor should be informed in writing of vacation plans and any other absences.

EVALUATION OF DOCTORAL STUDENTS

Doctoral students are evaluated by the Department, School and University. The Policy and Procedure Manual (PPM) for each program and should be reviewed when a student reaches this stage of their academic program. In the event that there is a difference between the PPM and this handbook, the PPM is considered to be the authoritative source. PPMs are found on the School's website.

I. Coursework Successfully Completed;
   Research Topics Identified
II. Comprehensive Written Examination Passed
III. Departmental Oral (administered by academic divisions)
   Note: Exam is optional for DrPH students
IV. PhD Preliminary Oral Examination or DrPH School-wide Preliminary Oral Examination Passed
V. Thesis Advisory Committee established (Departmental)
VI. Thesis Research Begins
VII. Thesis Defense Date Scheduled
VIII. Thesis Forwarded to Readers
IX. Final Oral Defense and Public Seminar Presented

DOCTORAL EXAMS AND PROCEDURES

The following information regarding thesis and doctoral exams serves as a general guide to departmental policies and procedures. Please note that the School's PPM (see: ***https://my.jhsph.edu/Resources/PoliciesProcedures/ppm/Pages/default.aspx***) for PhD programs provides comprehensive details about each exam and related procedures.
See divisional sections for procedures specific to each program.

COMPREHENSIVE WRITTEN EXAM

A comprehensive written exam is required of all doctoral students. The exam should be taken before the end of the second year of the program, when course work is essentially completed. This examination constitutes a comprehensive inquiry into the student's grasp of the subject matter underlying his/her discipline. Questions explore the student's understanding of scientific principles and methods. Students are expected to integrate their knowledge gained through required courses, courses representing the elected field of specialization and research, and seminar presentations. The program director should send written notification of the successful completion of the examination to the Department's Academic Program Manager. If a student fails the written exam, division faculty will decide if he/she will be permitted to retake the exam, and if so, whether he/she will be examined orally on a particularly weak area or be required to take another exam comprised of new questions. Only one reexamination may be permitted. A second failure will result in termination from the program. Doctoral students who are not able to continue in the program may request a transfer from the PhD program to the MHS or ScM program. Each academic division or program has specific guidelines concerning the written comprehensive exams, which may be obtained from the divisional and program offices. Toxicology students fulfill this requirement by preparing a research proposal, which is outlined in the Toxicology section of this handbook.

DEPARTMENTAL ORAL EXAMINATION

All PhD students of the Department of Environmental Health Sciences are required to pass a departmental oral exam as a prerequisite for taking the University Graduate Board Oral Examination. This exam provides an opportunity for the student to demonstrate effective verbal communication skills and the ability to engage in scientific exchange.

The Departmental Oral Examination is administered by the EHS academic divisions. The following process is usually followed for the examination but students should consult with their advisor about specific expectations, including faculty who should be in attendance. The examining committee comes predominantly from the student's division, but must include at least one faculty member from outside the division. It is the responsibility of the student to arrange a time and place for the examination. A written notice of the date and time of the exam along with a copy of the research proposal (following the appropriate grant application format) must be submitted to the committee at least two weeks in advance of the examination. The student bears overall responsibility for arranging the examination and ensuring that the required number of faculty will be in attendance.

During the oral examination, the student presents his/her proposal and fields questions to determine whether he/she is adequately prepared to conduct the research outlined in the proposal. Questioning continues until all faculty members have had the opportunity to ask questions and are satisfied that the questioning has been completed. At the conclusion of the examination, the student will be excused from the room and the faculty will vote to pass or fail the student. If more than one faculty member votes fail, the student will be considered to have failed the exam.

If the student fails the exam, he/she may have an opportunity to retake the exam at the discretion of the examining committee. The committee can agree to a conditional pass and define the conditions that must be fulfilled in order to obtain a pass. The committee chair will submit a brief report summarizing the decision of the committee to the EHS Academic Program Manager. This information will be communicated to the Office of the Registrar by the EHS Academic Program Manager.

PRELIMINARY ORAL EXAMINATION

The Preliminary Oral Examination (also referred to as the Graduate Board Examination), administered by the University, determines whether the student has both the ability and knowledge to undertake significant research in his/her specialized area of interest. The exam must be taken no later than the end of the student's third year in residence after the full-time residency requirement is completed, and before significant engagement in dissertation research. Toxicology students must take the examination within one to two months of completing the Comprehensive Written Examination, which is usually by May or June of the second year (see Toxicology section).

The student and his/her advisor are responsible for initiating arrangements for this examination. The Department's Academic Program Manager will assist with the appropriate forms and other important information.

Requests for scheduling the exam must be sent to the Office of Records and Registration at least four weeks prior to the examination; therefore, it should be submitted in advance of this time to the EHS Academic Program Manager for processing.

The committee shall consist of five voting members. Not more than three members of the primary Department can serve, and one of these must be the thesis advisor. The primary appointment of faculty members determines whether they are considered inside or outside the department. Advisors, however, are considered inside examiners even if their appointment is outside of the department sponsoring the candidate. The senior faculty member outside the student's major department will normally serve as chair and must hold the rank of Full or Associate Professor and be appointed by the Graduate Board. One adjunct faculty or one scientist track faculty may serve on the committee, but may not serve as the chair or the advisor. Two alternates, one inside and one outside the department, will also be designated. Each must have a current appointment as Assistant Professor or higher in a JHU department or program. A minimum of three departments of the University, at least two being from the School of Public Health, must be represented.

If the student fails the exam and is permitted a re-examination, he/she must be re-examined within a year.

THESIS ADVISORY COMMITTEE (Departmental)

Upon successful completion of the Preliminary Oral Examination, a Thesis Advisory Committee will be formed to provide continuity in the evaluation of progress and development of the student. The principal responsibilities of the Committee are to review the student's dissertation proposal, to advise and guide the student's research, and to read and evaluate the student's final dissertation. Students work in consultation with their advisor and/or program/division director to select members of the Committee. The Committee consists of the student's advisor and two to four other faculty members from both inside and/or outside the student's department with expertise in areas relating to the proposed research of the student. Membership of the Committee may change as dictated by the needs of the student and direction of the research.

It is expected that the student will meet formally at least twice per year (every six months) with the Committee, beginning six months from the successful completion of the graduate Preliminary Oral Examination until the final defense. At these meetings, the student will present progress on his/her thesis project and the Committee will offer advice. For each meeting, a written evaluation (Research Committee Meeting Form) of the student's development will be prepared by the Committee, discussed with the student, and submitted to the Academic Program Manager to be included in the student's departmental file. As the thesis project progresses, the Committee may indicate a target date for completion of the project.

THESIS RESEARCH (Dissertation)

The thesis must be based on original research, worthy of publication and acceptable to the Department and to the Committee of Thesis Readers (Committee of Readers).

FINAL ORAL DEFENSE AND PUBLIC SEMINAR

The oral defense of the thesis shall be conducted by the Committee of Thesis Readers after the Thesis Advisory Committee agrees that the candidate is ready for the formal defense. During this defense the Committee shall evaluate:

I. The originality and publication potential of the research;
II. The candidate's understanding of the details of the methodologic and analytic work;
III. The final quality of the written thesis document.

Certification of Fulfillment of all Requirements and Nomination for Degree—
Once a date for the defense has been agreed upon by the Committee of Thesis Readers and Final Oral Examination Committee, a formal request for the final oral defense should be submitted to the Office of Records and Registration at least four weeks prior to the exam date. This should be submitted in advance of the four week period to the EHS Academic Program Manager for processing. The Academic Program Manager will assist with the appropriate forms and other important information. The advisor will notify the Department chair that the thesis is in a final form that is ready to be submitted to the readers and that all other School and Department requirements for the degree have been fulfilled.

Committee of Thesis Readers — The final oral examination is a defense of the thesis before a committee of at least four readers after they have read the thesis and agreed that it is ready for defense. The readers include the thesis advisor and at least three other faculty members with the rank of Assistant Professor or higher. At least three departments of the University, including at least two departments of the Bloomberg School must be represented. Normally, two readers are from the student's own department. The senior faculty member outside the student's Department will normally serve as chair and must hold the rank of Full or Associate Professor. The primary appointment of faculty members determines whether they are considered inside or outside the department.

Timing Note: The thesis should be in its final form before distribution to the readers. This is confirmed by the advisor signing off on the thesis before it's distributed to the readers. Thesis readers must have at least one month to read the thesis before the final examination is held as they might have suggested revisions as well.

Thesis Seminar — All doctoral candidates are required to give a formal public presentation of their completed thesis work at a public Division or Program Seminar.

Divisional administrative staff are available to assist in scheduling a room for this event as well as advertising this event to the appropriate audience.

Students should consult the Preparation of Thesis, Attachment No. 1, of the Policy and Procedure Memorandum (PPM) for details on the preparation of the thesis at: ***www.library.jhu.edu/services/cbo/guidelines.html.***

PhD in ENVIRONMENTAL HEALTH ENGINEERING

PROGRAM DESCRIPTION

Environmental Health Engineering scientists seek to improve public health through interdisciplinary research, professional training, and practice. Research focuses on ways to prevent or minimize the adverse effects of physical, chemical, and biological agents by identifying and studying their sources, fate and transport in both occupational and non-occupational environments. They also develop and evaluate risk management strategies that effectively protect human health. Exposure assessment is an integrating theme throughout this program. Research and training in exposure and risk assessment employs principles and methods in chemistry, biology, and physics and includes development and evaluation of biomarkers of exposure.

Environmental health engineering research opportunities in the Department emphasize exposure assessment methods and models for recognizing, evaluating and controlling hazards in the workplace and community environment. Assessments consider the continuum of exposure from source to effect and are comprehensive in nature, incorporating all relevant routes and pathways with a particular emphasis on air and water contamination. Such assessments are integral to evaluating risk, to discovering environmental disease associations, and to developing methods and strategies for hazard reduction. Research within the division is highly interdisciplinary with opportunities to interact and collaborate with other departmental faculty, as well as faculty from other departments in the School, the School of Medicine, the School of Engineering, and the School of Arts & Sciences. Applicants for research training should have a strong background in the physical, chemical and biological sciences, including college-level physics and calculus.

SEMINARS AND JOURNAL CLUB OPPORTUNITIES

In addition to attendance at formal courses, PhD students are expected to attend the divisional seminars, which are generally held at the School of Public Health at noon on Wednesdays. Once a month, the seminar session will be in the format of a Journal Club presentation. Students are also expected to attend the monthly NIOSH Education and Research Center (ERC) seminar, which is also attended by students from the Division of Occupational and Environmental Health and the Occupational Injury Epidemiology Program.

GRADE AND PROGRAM REQUIREMENTS

All students must maintain at least a "B" average (3.0) to remain in the program. Furthermore, faculty expects that students will not obtain a grade below a "B" in any course. If a student receives a grade lower than "B", she/he must consult their faculty advisor and discuss an appropriate course of action. A grade of "C" might be allowed to stand, or the student may be required to retake the course. This is a decision that should be made in consultation with the faculty advisor. No grade of less than "C" is considered acceptable.

A student who is unable to maintain a "B" average will be considered in academic difficulty and undergo a formal academic review by the faculty. Based on the outcome of this review, she/he may be asked to leave the program.

POSTDOCTORAL OPPORTUNITIES

Postdoctoral students begin the program working in the laboratory of their postdoctoral mentor. Postdoctoral students may, after consultation with their faculty mentor, take elective courses. However, the primary training of postdoctoral students in the program occurs in the laboratory.

Postdoctoral students who are U.S. citizens or permanent residents can be supported by the NIEHS training grant for up to two years. Postdoctoral students are expected to apply for their own individual postdoctoral fellowships from the NIH or another appropriate organization with the goal of obtaining independent support beginning in the second year of postdoctoral study. This affords other faculty members the opportunity to recruit additional postdoctoral students.

Department of Environmental Health Sciences
PhD in Environmental Health Engineering - Academic Year 2010-11
Core Curriculum Requirements

Departmental Requirements

Course Number	Course Name	Day/Time	Term	Units
180.609	Principles of Environmental Health I	MW 1:30 - 3:20	1	4
180.610	Principles of Environmental Health II	TTh 8:30 - 10:20	2	4

Division Requirements

Course Number	Course Name	Day/Time	Term	Units
140.621	Statistical Methods in Public Health I	TTh 10:30 - 11:50 *	1	4
140.622	Statistical Methods in Public Health II	TTh 10:30 - 11:50 *	2	4
140.623	Statistical Methods in Public Health III	TTh 10:30 - 11:50 *	3	4
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	2	4
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 2:30 - 3:50	3	4
182.625	Principles of Occupational and Environmental Hygiene **	TTh 1:30 - 3:20	2	4
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
187.610	Public Health Toxicology **	WF 3:30 - 4:50	1	4
317.600	Introduction to the Risk Sciences and Public Policy **	MW 5:00 - 6:30	1	3
317.605	Methods in Quantitative Risk Assessment	MW 5:00 - 6:30 *	3	4
340.601	Principles of Epidemiology ***OR***	MWF 8:30 - 9:20 *	1	5
340.751	Epidemiologic Methods I	MWF 8:30 - 9:50 *	1	5

Occupational and Environmental Hygiene / Air Pollution Program Requirements

Course Number	Course Name	Day/Time	Term	Units
182.614	Industrial Hygiene Laboratory	WF 1:30 - 4:50	3	5
182.615	Airborne Particles	F 9:30 - 11:50	4	3
182.616	Advanced Topics In Airborne Particles	F 8:30 - 10:20	2	2
182.617	Introduction to the Chemistry of Ambient Air Pollutants	TTh 3:30 - 4:20	2	2
183.641	Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	4	3

Water and Health Program Requirements

Course Number	Course Name	Day/Time	Term	Units
182.638	Environmental and Health Concerns in Water Use and Reuse	WF 8:30 - 10:20	4	4
221.629	Water and Sanitation Needs in Complex Humanitarian Emergencies	TTh 1:30 - 3:20	2	2
260.631	Immunology, Infection and Disease	TTh 3:30 - 4:50	2	3

(continued on next page)

Department of Environmental Health Sciences
PhD in Environmental Health Engineering - Academic Year 2010-11
Core Curriculum Requirements (cont'd)

School Requirements

The following courses fulfill the School requirements for all research students. Doctoral students who have earned an MPH Degree within the last ten years are waived from the 550.865-866 requirements. In addition, all students are required to complete the Academic Ethics Module (on-line course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Course Number	Course Name	Day/Time	Term	Units
550.600 or 550.860	Responsible Conduct of Research *(NIH funded students MUST take this course)* ***OR*** Research Ethics	W 3:30 - 5:20 **OR** Online	1	1
550.865	Public Health Perspectives on Research	Online	2	2
	Academic Ethics Module +	Online		

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free *Introduction to Online Learning* course prior to the term in which the course is taken. For instructions go to:
http://distance.jhsph.edu/iol/

+ In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:
https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

PhD in OCCUPATIONAL and ENVIRONMENTAL HEALTH

PROGRAM DESCRIPTION

Occupational and Environmental Health scientists prevent disease and injuries related to occupational and environmental stressors and promote health among individuals and in populations through research, professional practice and teaching. The Department offers formal training in occupational and environmental health, with particular strength in the areas of the application of biomarkers of exposure, dose and susceptibility; molecular, occupational and environmental epidemiology; and occupational and environmental policy and management. Additional student and post doctoral programs include a residency program in occupational and environmental medicine and a doctoral program in occupational and environmental health nursing.

The doctoral program in occupational and environmental health prepares students for academic careers in teaching and research. Students pursue excellence in scholarly creative research in the etiology, detection and (biologic) monitoring, diagnosis and prevention of human diseases of occupational and environmental origin. Research toward the PhD degree leads to an expanded understanding of one of the several domains of occupational and environmental health, including clinical and laboratory toxicology; development and validation of biomarkers; occupational, environmental, and molecular epidemiology; and biostatistics, population health management and health promotion, and intervention studies focused on disease prevention.

Occupational and environmental health faculty members are engaged in a wide range of research projects, primarily in human research studies utilizing epidemiological methods and often with a focus on disease etiology and causal pathways. The research of faculty advisors in the concentration includes particular strength in the central nervous system; peripheral nervous system; renal, musculoskeletal, pulmonary, and cancer outcomes. Research activities include a prominent focus on biomarkers and their application, and demonstration of utility for prevention; development, validation and effectiveness of medical surveillance activities; occupational and environmental health policy; evaluation of the health effects of global environmental change; interaction between genetic factors and occupational and environmental exposures in causing disease; the impact of health conditions on productivity and ability to work; and causes, risk factors, diagnosis and treatment of occupational and environmental diseases and injuries.

Students in this program show an interest in human studies, biology, epidemiology, policy management and social and built environments.

For more information on the program, contact Dr. Paul Strickland, Occupational and Environmental Health Program Director at, *pstrickl@jhsph.edu*.

SEMINARS AND JOURNAL CLUB OPPORTUNITIES

In addition to attendance at formal courses, PhD students are expected to attend the weekly divisional seminar which is generally held at the School of Public Health at 12:00 noon on Mondays. Once a month this seminar is sponsored by NIOSH Education and Research Center (ERC), which is also attended by students from the Division of Environmental Health Engineering and the Occupational Injury Epidemiology Program.

Also monthly this seminar takes the form of a monthly journal club. As occupational and environmental health professionals, it is important that divisional PhD students be current with the literature in the field. This involves not only reading, but discussing with peers and mentors the content and importance of what has been read. The monthly journal club, held on Mondays in conjunction with the Department of Epidemiology, provides the forum for this required activity. In addition, biweekly grand rounds in Occupational/Environmental Medicine, conducted by the occupational medicine residency program, examine occupational and environmental medicine issues, including clinical, epidemiologic, management, and policy issues. The Occupational Health Nursing Program also holds weekly seminars.

GRADE AND PROGRAM REQUIREMENTS

A GPA of 3.0 for all courses taken is required by the Division of Occupational and Environmental Health for PhD degree candidates. This GPA will not include Research (820 level courses) or Special Studies (840 level courses) as part of this average. If the student has not maintained this average at the time he/she is scheduled to take the written comprehensive exam, he/she will be terminated from the program. Program specific description and requirements for the comprehensive written examination are available from the Program Director.

POSTDOCTORAL OPPORTUNITIES

The Division of Occupational and Environmental Health accepts applications for postdoctoral fellows (PDF). Applications, including degree completion and other required documents, must be completely processed before a postdoctoral student may be accepted. The postdoctoral fellowship program provides concentrated training with individual faculty from the Department. Postdoctoral programs are open to qualified individuals with a health sciences/biology background. Interested applicants should follow application procedures as specified by the Office of Admissions, available at ***http://www.jhsph.edu/GER/postdocs.html.***

OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSING PROGRAM

This program, funded by the National Institute for Occupational Safety and Health (NIOSH) within the Johns Hopkins Education and Research Center, graduates nurses with MPH, MSN/MPH, PhD, and DrPH degrees in the field of occupational and environmental health.

MPH students are enrolled in the school-wide MPH program (11 months) and take additional courses with a focus on occupational and environmental health. This program also collaborates with the Johns Hopkins School of Nursing to offer an MSN/MPH degree (18 months). Master's graduates hold upper level positions in local, state, and federal government agencies, military services, private sector, industry, and labor organizations that deal with occupational or environmental issues. The doctoral program, the first in the world to offer nurses doctoral preparation in occupational and environmental health, addresses the need for nurses who are prepared to conduct research and to design interventions to prevent adverse effects of workplace and community exposures on human health. Doctoral graduates conduct research, teach at the university level, and manage occupational and environmental health programs.

Within each degree option, there are opportunities to incorporate coursework in specific areas of interest, such as disaster preparedness, worker health promotion, occupational injury prevention, and the use of biomarkers of exposure and susceptibility. In addition to an academic focus on nursing and environmental health, curriculum requirements include epidemiology, biostatistics, occupational and environmental health, injury prevention, management and policy, and toxicology as it relates to human health.

For more information on the program, contact Dr. Sheila Fitzgerald (OEHN Program Director), *sfitzger@jhsph.edu*, Room W7503, 410-955-4082 or Dr. Jacqueline Agnew (ERC Director), *jagnew@jhsph.edu*, Room W7503, 410-955-4037.

OCCUPATIONAL MEDICINE RESIDENCY PROGRAM

As a preventive specialty administered by the American Board of Preventive Medicine, occupational and environmental medicine emphasizes both clinical skills and a broad comprehension of epidemiology, toxicology, administration, and biostatistical principles that can be applied to occupationally or environmentally exposed populations.

The Johns Hopkins Occupational Medicine Residency is a two-year program designed to prepare physicians to practice occupational and environmental medicine in a number of different settings, including corporate occupational medicine departments, regulatory agencies, occupational medicine clinics, or academic medical centers.

The first year of the program is the Master of Public Health degree, in the oldest and largest school of public health in the country. The second year includes rotations in industries, unions, regulatory agencies, and clinics that provide a broad and deep exposure to all aspects of occupational and environmental medicine practice. More detailed information is available on the Web (use the "Search" function to find occupational medicine programs in Maryland).

For more information about the program, contact Director Dr. Virginia Weaver, *occmed@jhsph.edu*, 410-955-3362 or Deputy Director Dr. Brian Schwartz, *bschwart@jhsph.edu*, 410-955-4158. Visit the program website at ***http://www.jhsph.edu/omr/index.html*.**

PROGRAM on GLOBAL SUSTAINABILITY and HEALTH

The Program on Global Sustainability and Health is dedicated to public health research, education, practice and policy as it relates to examination of the drivers, consequences and implications of global environmental change and the challenges and obstacles to achieving a more sustainable future.

Students in the MPH, MHS, DrPH and PhD programs are encouraged to participate in the activities of the program. For additional information, visit the program website at: ***www.jhsph.edu/dept/ehs/research_centers/sustainability*** or contact Dr. Brian Schwartz at *bschwart@jhsph.edu* or Dr. Cindy Parker at *ciparker@jhsph.edu*.

Department of Environmental Health Sciences
PhD in Occupational and Environmental Health - Academic Year 2010-11
Core Curriculum Requirements

Students should select from section A thru E as noted below.

A. Core Requirements

Course Number	Course Name	Day/Time	Term	Units
140.621	Statistical Methods in Public Health I	TTh 10:30 - 11:50 *	1	4
140.622	Statistical Methods in Public Health II	TTh 10:30 - 11:50 *	2	4
140.623	Statistical Methods in Public Health III	TTh 10:30 - 11:50 *	3	4
182.625	Principles of Occupational and Environmental Hygiene **	TTh 1:30 - 3:20	2	4
187.610	Public Health Toxicology **	WF 3:30 - 4:50	1	4
188.680	Fundamentals of Occupational Health **	TTh 3:30 - 4:50	1	3
340.751	Epidemiologic Methods I	MWF 8:30 - 9:50 *	1	5
340.752	Epidemiologic Methods II	MWF 8:30 - 9:50 *	2	5
340.753	Epidemiologic Methods III	MWF 8:30 - 9:50 *	3	5

No required courses during Fourth Term. Note that *Statistical Methods in Public Health IV* (140.624) and *Methodologic Challenges in Epidemiologic Research* are highly recommended, especially for students doing epidemiologic research for the thesis. TTh 10:30 - 11:50, four units.

B. Required Courses in Environmental Health

Course Number	Course Name	Day/Time	Term	Units
180.601	Environmental Health ***OR***	Online	3	5
180.609	Principles of Environmental Health I ***AND***	M 1:30 - 3:50 TTh 8:30 - 10:20	1	4
180.610	Principles of Environmental Health II	M 1:30 - 3:50	2	4

C. Required Courses in Occupational and Environmental Health

In addition to the core requirements above, at least FOUR of the following courses are also required, in either or both emphasis areas. Please note that other courses in EHS may be substituted at the discretion of the advisor.

Courses with a greater emphasis in occupational health:

Course Number	Course Name	Day/Time	Term	Units
182.621	Introduction to Ergonomics	F 8:30 - 11:50	2	4
182.623	Occupational Safety and Health Management	M 1:30 - 3:50	3	3
182.631	Principles of Occupational Safety	F 1:30 - 3:20	1	2
188.681	Occupational Health	M 8:30 - 11:50 ***AND*** W 8:30 - 4:50	4	5
188.686	Clinical Environmental and Occupational Toxicology	WF 1:30 - 2:50	3	3
188.694	Occupational Health and Vulnerable Worker Populations **	T 9:00 - 11:50	4	3

(continued on next page)

Department of Environmental Health Sciences
PhD in Occupational and Environmental Health - Academic Year 2010-11
Core Curriculum Requirements (cont'd)

C. Required Courses in Occupational and Environmental Health *(continued from previous page)*

Courses with a greater emphasis in environmental health:

Course Number	Course Name	Day/Time	Term	Units
180.611	The Global Environment and Public Health	TTh 8:30 - 10:20	1	4
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
180.631	Environmental and Occupational Health Policy Seminar	TTh 3:30 - 6:20	4	3
180.651	Energy Policy Choices and Public Health	M 1:30 - 3:20	3	2
182.638	Environmental and Health Concerns in Water Use and Reuse	WF 8:30 - 10:20	4	4
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
183.641	The Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	4	3
188.682	Buildings, Land Use, Transportation and Public Health	F 1:30 - 3:20	4	2

One specialty course credit will be given to students completing the four course Risk Sciences series:
(course numbers listed here)

Course Number	Course Name	Day/Time	Term	Units
317.600	Introduction to the Risk Sciences and Public Policy **	MW 5:00 - 6:30	1	3
317.605	Methods in Quantitive Risk Assessment	MW 5:30 - 6:50	3	4
317.610	Risk Policy, Management and Communication**	MW 5:00 - 6:30	2	3
317.615	Topics in Risk Assessment	M 5:00 - 6:30 *	4	2

D. Required Courses in Epidemiology

In addition to required and specialty area courses. TWO of the following epidemiology courses are required:
(other epidemiology courses may be substituted with the approval of the advisor)

Course Number	Course Name	Day/Time	Term	Units
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 2:30 - 3:50	3	4
340.618	Occupational Epidemiology *(Note: Every other year)*	TTh 1:30 - 2:50	4	4
340.637	Environmental Epidemiology *(Note: Every other year)*	TTh 1:30 - 2:20	3	2
340.664	Introduction to Genetic Epidemiology **	TTh 8:30 - 10:20	1	4
340.705	Advanced Seminar in Social Epidemiology *(Note: Every other year)*	MW 1:30 - 3:20	3	3

(continued on next page)

Department of Environmental Health Sciences
PhD in Occupational and Environmental Health - Academic Year 2010-11
Core Curriculum Requirements (cont'd)

E. School Requirements *(continued from previous page)*

The following courses fulfill the School requirements for all research students. Doctoral students who have earned an MPH Degree within the last ten years are waived from the 550.865-866 requirements. In addition, all students are required to complete the Academic Ethics Module (on-line course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Course Number	Course Name	Day/Time	Term	Units
550.600 or 550.860	Responsible Conduct of Research *(NIH funded students MUST take this course)* ***OR*** Research Ethics	W 3:30 - 5:20 **OR** Online	1	1
550.865	Public Health Perspectives on Research	Online	2	2
	Academic Ethics Module +	Online		

Electives

In addition to the required courses, there is a wide variety of relevant elective courses available as listed on the catalog of the Bloomberg School. Specific course selections should be reviewed with the advisor.

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free *Introduction to Online Learning* course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

+ In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

PhD in PHYSIOLOGY

PROGRAM DESCRIPTION

The lung the primary target organ for the toxic effects of inhaled particles and gases. Not only can the lung be affected directly by what is breathed in, but also these toxic effects frequently penetrate to other organs in the body. In the Division of Physiology, students and faculty are involved in basic research to understand the biologic mechanisms underlying the pathologic alterations in structure and function in the lung, heart, and other organs affected by ambient air. Research is often done in collaboration with physicians and scientists in the School of Medicine, and students normally attend and present their work at either the annual American Thoracic Society or Experimental Biology meetings, and support for this is provided by the Division and research mentor. Current research areas being investigated by students include various lung injury models of asthma, emphysema, fibrosis, and mechanical damage. In preparing for a career in research, students also get active mentoring in writing scientific papers and grant proposals.

SEMINARS AND JOURNAL CLUB OPPORTUNITIES

Current Research in Physiology (183.861) is required in each academic term during the entire training program. This course involves presentations by students, fellows, and faculty expounding their ongoing research, or in the case of new students, their research interests. Students must present at least once per year. Twice each month, students and faculty meet to discuss a current research paper. The paper selection is done on a rotating schedule with one student and faculty adviser. The student presents a summary of the paper to the group. Participation in this journal club is required of all students.

RESEARCH ROTATIONS

Each predoctoral student must complete at least three research rotations. The purpose of these research rotations is first to expose the students to the spectrum of physiologic research questions and laboratory methods, and second to help students select a lab for their own thesis research. Selection of the laboratories for these rotations depends upon the needs and interests of the student – the specific labs are chosen in discussions with the academic adviser and the Divisional director.

The research rotation program is structured as follows:
First Rotation during the 1st and 2nd quarters of year one.
Second Rotation, Jan. 3 to March 15.
Third Rotation, March 15 to June 15.

At the end of each rotation, students must prepare a 2 page report summarizing the goals, results, and conclusions drawn from the research experience. This should be submitted to the first year academic advisor. By the end of June of the first year, students must select their research thesis advisor.

GRADE AND PROGRAM REQUIREMENTS

Students spend the first year taking basic and required courses. Lab rotations are also part of this first year, and by the end of this year, students will have selected a lab for their thesis work. The research occupies most of the time, but there are several journal clubs, seminars, and scientific meetings that also make up an important part of the training program.

Physiology PhD exam schedule

1. Research advisor selected in the summer after the first year.

2. A written thesis proposal in the form of an NIH R01 must be submitted prior to Thanksgiving in the second year. This will constitute the School's requirement for a written exam.

3. The proposal will be reviewed and critiqued by 3 faculty, and an amended proposal should be resubmitted prior to Christmas.

4. This revised proposal will be rescored by the same faculty, and if the score is approved, the student will set up an oral defense of the proposal by 5 faculty, who will be responsible for giving a grade (Pass, Conditional Pass, Fail). This oral defense should be done prior to the end of January in the 2nd year, and will be open to all faculty and students.

5. The Preliminary Oral Exam (Graduate Board Oral) should then be scheduled within 2 months after passing this oral defense.

In their formal coursework, all students must maintain at least a "B" average to remain in the program. It is the general policy of this program that students may not have more than one "C" remain on their transcript. Exceptions may be made for Physiology students taking courses specifically designed for medical students in the School of Medicine. No grade of less than "C" is considered acceptable. Any course where a grade less than "C" is obtained must be taken over and a grade of "B" or higher achieved. A student with more than one "C" will be placed on academic probation and undergo a formal academic review by the faculty. Based on the outcome of this review, she/he may be asked to leave the program.

In order to monitor and document adequate academic performance and progress, the student's academic adviser performs an assessment at the end of the first year of the program. The adviser assesses coursework performance (e.g., GPA), lab rotations, and general interactions with faculty, and must sign off for the student to continue and establish a new research advisor). The student has an opportunity to add comments to the End of the First Year Report form and must also sign the form. The EHS Academic Program Manager will review all reports.

POSTDOCTORAL OPPORTUNITIES

The Division of Physiology accepts applications for postdoctoral fellows (PDF). Applications, including degree completion and other required documents, must be completely processed before a postdoctoral student may be accepted. The postdoctoral fellowship program provides concentrated training with individual faculty from the Department. Postdoctoral programs are open to qualified individuals with a health sciences/biology background. Interested applicants should follow application procedures as specified by the Office of Admissions, available at ***http://www.jhsph.edu/GER/postdocs.html*.**

Department of Environmental Health Sciences
PhD in Physiology - Academic Year 2010-11
Core Curriculum Schedule - Year 1

First Term

Course Number	Course Name	Day/Time	Units
100.709 *(SOM)*	Macromolecular Structure Analysis	TTh 9:00 - 10:30 (Aug-Oct; one week overlap with Mol Bio. & Genomics)	3
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:20 - 1:20	1
187.610	Public Health Toxicology	WF 3:30 - 4:50	4
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
550.600	Responsible Conduct of Research *(can also be taken in the second year)*	W 3:30 - 5:20	1

Second Term

Course Number	Course Name	Day/Time	Units
120.603 *(SOM)*	Molecular Biology of Disease	TTh 2:00 - 2:50	3
183.631	Fundamentals of Human Physiology	MW 1:30 - 3:20	4
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:00 - 1:20	1
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
187.632	Toxicology: The Molecular Basis	MWF 10:30 - 11:50	4
550.865	Public Health Perspectives on Research	Online	2

Third Term

Course Number	Course Name	Day/Time	Units
140.615	Statistics for Laboratory Scientists I	MWF 10:30 - 11:20 *	4
187.630	Bioanalytical Toxicology	TTh 10:30 - 11:50	4
180.601	Environmental Health	Online	5
183.840	Special Studies/Research (Physiology)	TBA	6
183.861	Current Research in Physiology	W 12:00 - 1:20	1
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
360.728 *(SOM)*	Pathways and Regulation	TTh 9:00-10:30 (Jan 4 - March 1)	3
340.703 *(SOM)*	Cell Structure and Dynamics	MWF 9-10:30 (Jan 24-March 4)	3

Fourth Term

Course Number	Course Name	Day/Time	Units
140.616	Statistics for Laboratory Scientists II	MWF 10:30 - 11:20 *	4
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:00 - 1:20	1
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
187.620	Environmental Toxicological Pathology ***OR***	WF 3:30 - 4:50	3
TBA (SOM)	Organ Systems/Physiology	TBA	

SOM = School of Medicine

*** Check current schedule for all course and/or lab times:**

http://commprojects.jhsph.edu/courses

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:
https://apps2.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Department of Environmental Health Sciences
PhD in Physiology - Academic Year 2010-11
Core Curriculum Schedule - Year 2

First Term

Course Number	Course Name	Day/Time	Units
183.840	Special Studies/Research (Physiology)	TBA	4
183.638	Mechanisms of Cardiopulmonary Control	Th 3:00 - 5:00	2
183.861	Current Research in Physiology	W 12:00 - 1:20	1
340.601	Principles of Epidemiology	MWF 8:30 - 9:20 *	5
550.600	Responsible Conduct of Research *(if not taken in the first year)*	W 3:30 - 5:20	1

Second Term

Course Number	Course Name	Day/Time	Units
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:00 - 1:20	1
800.707 *(SOM)*	Computational Biology & Bioinformatics	TBA	

Third Term

Course Number	Course Name	Day/Time	Units
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:00 - 1:20	1
183.642	The Cardiopulmonary System Under Stress	Th 3:00 - 5:00	2
250.703 *(SOM)*	Graduate Immunology	TBA	

Fourth Term

Course Number	Course Name	Day/Time	Units
183.643	Essentials of Pulmonary Function Measurements	TBA	3
183.840	Special Studies/Research (Physiology)	TBA	4
183.861	Current Research in Physiology	W 12:00 - 1:20	1
183.641	Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	3
187.641	Immunology of Environmental Disease	MW 1:30 - 2:50	3
250.703 *(SOM)*	Graduate Immunology	TBA	

***** Check current schedule for all course and/or lab times:

http://commprojects.jhsph.edu/courses

**** Also offered Online**

Note: Courses offered online require students to establish an eLearning account and to complete the free "*Introduction to Online Learning*" course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

PhD in TOXICOLOGY

PROGRAM DESCRIPTION

Toxicology research and training in the Department focuses on the mechanisms of toxicity in cells, tissues and organisms at the chemical, biochemical, cellular and molecular levels. Faculty research programs involve investigation of the mechanisms of toxicity of environmental agents, the mechanisms controlling host responses to environmental toxicants, the potential hazards of exposure to such agents, and methods for protecting the exposed host from environmentally-induced disease. Emphasis is on cellular macromolecules and biochemical/molecular processes as targets for environmental toxicants. Doctoral students receive basic training in toxicology, as well as in cell biology, biochemistry, molecular biology, physiology and biostatistics.
Doctoral students also gain initial research experience through research rotations in the laboratories of program faculty. Following completion of basic coursework and laboratory rotations, students proceed to advanced training as they pursue their thesis research under the guidance of the thesis advisor and take selected elective courses chosen in consultation with their advisor. The diversity of interests represented in the program provides a unique interdisciplinary background in toxicology that will ultimately permit students to address toxicologic problems affecting environmental public health in comprehensive and innovative ways. Facilities available to toxicology students for research and training activities include molecular imaging and mass spectrometry, as well as equipment and facilities for gene array, proteomics, epigenetics and other molecular genetic techniques, cell culture and microbiology.

SEMINARS AND JOURNAL CLUB OPPORTUNITIES

The Toxicology Seminar Course (187.861) is taken in each academic term during the entire training program – attendance is required. It is an eight-credit (two credits per term) course graded pass/fail for each term; the grade is assigned at the end of the fourth term. The grade is based on attendance, level of active participation and quality of presentations. The course has three components:

1. Journal Club: Each student is required to attend and actively participate in a bi-weekly journal club. Students generally present one journal article over the course of each academic year. If a Journal Club is missed, students are required to write a summary of the paper discussed.

2. Seminar: The Program, alone or together with the NIEHS Center in Urban Environmental Health, EHS Training Program or the Center for Alternatives to Animal Testing, sponsors a bi-weekly seminar. In this setting, Hopkins faculty from outside the Program, scientists from other institutions, and alumni are invited to present their latest research results.

3. Research Rotation/Progress Seminars: Students present the results of their research rotations and annual updates of their thesis research in the form of a short seminar.

RESEARCH ROTATIONS

Each predoctoral student must complete at least three research rotations by the end of their first academic year. Selection of the laboratories for rotation depends upon the interests of the student, but the need to obtain breadth in research experience is also important. The goals of the research rotation program include:

1. Obtaining experience at the lab bench;
2. Learning a diversity of techniques and the theoretical bases of these techniques;
3. Learning aspects of the subject area of research in the laboratory;
4. Learning aspects of experimental design and;
5. Carrying out simple to complex experiments depending on prior experience.

The research rotation program is structured as follows:

1. Duration: Each rotation is essentially a tutorial. Thus, the goal and plan for each rotation must be agreed upon before it begins through discussions between the student and the faculty member. The duration will depend upon the time the student can devote to the lab but should typically be 10-12 weeks.

2. Toxicology Program faculty members are the only faculty who can serve as primary thesis advisors for a PhD student in Toxicology. Research rotations with faculty outside of the Program are possible but must be discussed with and approved by the faculty advisor. Students who desire to conduct their PhD thesis research with a faculty member in another program must either:
    a.) develop a joint thesis project between one of the Toxicology faculty (who will serve as the primary thesis advisor) and the other faculty member; or
    b.) apply for admission and transfer to that program.

3. Students must complete their rotations by June of their first year in the program and select their thesis advisor by this point. Requirements for completion of each rotation are:
    a.) successful completion of the rotation plan established at the beginning.
    b.) oral presentations of the results of the rotation research.

ORAL AND WRITTEN EXAM REQUIREMENTS

Toxicology students take a comprehensive exam, comprised of two parts: preparation of an R03 grant proposal followed by an oral examination. The due date for the R03 and date of the exam and examining faculty will be determined by the Program but will generally be during the 1st and 2nd terms of the second year of study. The requirements for the Preliminary Oral Exam are similar to those for other EHS students. Please refer to departmental section regarding these topics.

R03 Research Proposal (the written component of the comprehensive exam)
Students will prepare a research proposal based on the NIH RO3 format on their thesis research. They begin work on the R03 during the summer following completion of their first year of course work while also beginning their thesis research in the laboratory of the faculty member whom they selected to be their thesis advisor/mentor. Students can formulate a basic research plan with some consultation with their advisor/mentor, but the proposal must be written strictly by the student. Preliminary data is not required. The completed proposal will be reviewed by two members of the Toxicology faculty, followed-up within 1-2 weeks by a written critique and a verbal discussion with the student. During such discussion, specific strengths and weaknesses of the proposal can be addressed. Students will have one week to make appropriate revisions. The reviewing committee can then make recommendations to the student regarding their preparedness for taking the Departmental/Program Preliminary Oral Examination.

Departmental/Program Oral Examination
The thesis advisor will not be present at the exam. The oral exam will test the breath and depth of knowledge of first year course work and the ability of the student to synthesize hypotheses and design experiments; questions may also come from elements present in the student's R03. All students within a particular class will receive the same oral exam with the only difference being questions related to the student's R03.
The exam will have one of 3 outcomes:

- Pass
- Conditional Pass (deficiency in a specific area(s) – one reexamination allowed on area(s) of deficiency)
- Failure (deficiencies in multiple areas – one reexamination allowed)

Students with a conditional pass or a failure must pass the reexamination. Failure to do so will result in their termination from the doctoral program with an option to complete a master's degree (ScM).

PRELIMINARY ORAL EXAM (GRADUATE BOARD ORAL EXAM)

The requirements for this exam can be found in the Policy and Procedures Manual, section Academic Programs 03, Doctor of Philosophy, which is available on the Portal. It is required that Toxicology Program students complete the Preliminary Oral Exam during the 3rd term of their second year of study.

THESIS COMMITTEE EXPECTATIONS

The requirements for the Thesis Committee are the same as those for other EHS students. Please refer to departmental section regarding these topics.

GRADE AND PROGRAM REQUIREMENTS

All students must maintain at least a "B" average (3.0) to remain in the program. Furthermore, it is expected that students will not obtain any grade below a "B". This applies to all courses, both within the Department/Division and within other departments/divisions of the School of Public Health and the School of Medicine. If a student receives a grade lower than "B", she/he must consult their faculty advisor and dis¬cuss an appropriate course of action. A grade of "C" might be allowed to stand, or it may be important to retake the course. This is a decision that should be made in consultation with the faculty advisor and with the approval of the faculty of the Division. However, it is the policy of this program that students may not have more than one "C" remain on their transcript. No grade of less than "C" is considered acceptable.

POSTDOCTORAL OPPORTUNITIES

Postdoctoral students begin the program working in the laboratory of their postdoctoral mentor. They are expected to register for, and to participate fully in, the Toxicology Seminar Course. Postdoctoral students may also, after consultation with their faculty mentor, take elective courses. However, the primary training of postdoctoral students in the program occurs in the laboratory. Accordingly, postdoctoral students must register for 187.830 Postdoctoral Research Toxicological Sciences each term.

Postdoctoral students who are U.S. citizens or permanent residents can be supported by the NIEHS training grant for up to two years. Postdoctoral students are expected to apply for their own individual postdoctoral fellowships from the NIH or another appropriate organization with the goal of obtaining independent support beginning in the second year of postdoctoral study. This affords other faculty members the opportunity to recruit additional postdoctoral students. However, all postdoctoral students are guaranteed two years of training grant support as long as their performance is satisfactory as determined by their mentor.

Department of Environmental Health Sciences
PhD in Toxicology - Academic Year 2010-11
Core Curriculum Requirements

Departmental Courses

Course Number	Course Name	Day/Time	Term	Units
180.609	Principles of Environmental Health I ***AND***	MW 1:30 - 3:20	1	4
180.610	Principles of Environmental Health II	TTh 8:30 - 10:20	2	4
183.631	Fundamentals of Human Physiology	Online	4	4
187.610	Public Health Toxicology	WF 3:30 - 4:50	1	4
187.620	Environmental Toxicological Pathology	WF 3:30 - 4:50	4	4
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1 thru 4	1
187.630	Bioanalytical Toxicology	TTh 10:30 - 11:50	3	4
187.632	Toxicology: The Molecular Basis	MWF 10:30 - 11:50	2	4
187.641	Immunology of Environmental Disease	MW 1:30 - 2:50	4	3
187.661	Environmental Health in Neurotoxicological and Mental Disorders	TTh 10:30 - 11:50	4	3
187.840	Special Studies & Research [2]	TBA	1 thru 4	variable
187.861	Toxicology Seminar [1]	TBA	1 thru 4	2

Outside Department

Course Number	Course Name	Day/Time	Term	Units
100.709 *(SOM)*	Macromolecular Structure and Analysis[3]	TTh 9:00 - 10:30	1	
110.728 *(SOM)*	Cell Structure and Dynamics[3]	TBA	3	
140.615	Statistics for Laboratory Scientists I	MWF 10:30 - 11:20 *	3	4
140.616	Statistics for Laboratory Scientists II	MWF 10:30 - 11:20 *	4	4
260.709 *(SOM)*	Molecular Biology and Genomics[3]	MWF 9:00 - 10:30	1	
360.728 *(SOM)*	Pathways and Regulation[3]	TBA	2	
550.600	Responsible Conduct of Research	W 3:30 - 5:20	1	1
550.865	Public Health Perspectives on Research	Online	2	2

School Requirements

The following courses fulfill the School requirements for all research students. Doctoral students who have earned an MPH Degree within the last ten years are waived from the 550.865-866 requirements. In addition, all students are required to complete the Academic Ethics Module (on-line course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Course Number	Course Name	Day/Time	Term	Units
550.600 or 550.860	Responsible Conduct of Research *(NIH funded students MUST take this course)* ***OR*** Research Ethics	W 3:30 - 5:20 **OR** Online	1	1
550.865	Public Health Perspectives on Research	Online	2	2
	Academic Ethics Module +	Online		

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Department of Environmental Health Sciences
PhD in Toxicology - Academic Year 2010-11
Core Curriculum Requirements (cont'd)

Electives (consult with your Advisor)

Epidemiology

Course Number	Course Name	Day/Time	Term	Units
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 2:30 - 3:50*	3	4
340.601	Principles of Epidemiology	MWF 8:30 - 9:20 *	1	5

Biochemistry/Molecular Biology/Physiology/Genetics

Course Number	Course Name	Day/Time	Term	Units
120.603	Molecular Biology of Disease	TTh 2:00 - 2:50	2	3
120.620	Fundamentals of Reproductive Biology	TTh 3:30 - 4:50	1	3
120.621	Molecular Endocrinology	TTh 3:30 - 4:50	3	4
260.665	Biological Basis of Aging *(Note: Every other year)*	TTh 1:30 - 2:50	3	3
260.708 *(SOM)*	Genetics[3]	TTh 9:00 - 10:30	1	
330.709 *(SOM)*	Organic Mechanism in Biology[3]	WF 9:00 - 10:30	1	
800.707 *(SOM)*	Computational Biology & Bioinformatics[3]	M 9:00 - 10:30	2	

Immunology

Course Number	Course Name	Day/Time	Term	Units
260.611	Principles of Immunology I	TTh 8:30 - 10:20	1	4
260.612	Principles of Immunology II	TTh 8:30 - 10:20	2	4
260.714	Immunogenetics *(Note: Every other year)*	TTh 1:30 - 2:50	4	3
260.717	Graduate Immunology: The Immune Response	TTh 9:00 - 10:20	4	3

Neurosciences

Course Number	Course Name	Day/Time	Term	Credits
440.600 *(SOM)*	Neuroscience [3]	TBA	TBA	

Cancer

Course Number	Course Name	Day/Time	Term	Units
180.650	Fundamentals of Clinical Oncology for Public Health Practitioners	Th 5:30 - 8:00	2	3
340.624	Etiology, Prevention, and Control of Cancer	MWF 1:30 - 2:50	2	4

[1] Must be taken in each quarter during entire training period.

[2] This course, which includes the research rotations, is taken in each quarter until a trainee passes his/her Graduate University Board Oral Exam and begins a thesis project. These trainees then register for Thesis Research, Toxicological Sciences for the remainder of their time in the program.

[3] SOM, School of Medicine

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:

https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

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Department of Environmental Health Sciences
PhD in Toxicology - Academic Year 2010-11
Core Curriculum Requirements (cont'd)

Electives (consult with your Advisor) *(continued from previous page)*

Risk Assessment & Policy

Course Number	Course Name	Day/Time	Term	Units
317.600	Introduction to the Risk Sciences and Public Policy **	MW 5:00 - 6:30	1	3
317.605	Methods in Quantitative Risk Assessment **	MW 5:00 - 6:30	3	4
317.615	Topics in Risk Assessment	M 5:00 - 6:30	4	2

[1] Must be taken in each quarter during entire training period.

[2] This course, which includes the research rotations, is taken in each quarter until a trainee passes his/her Graduate University Board Oral Exam and begins a thesis project. These trainees then register for Thesis Research, Toxicological Sciences for the remainder of their time in the program.

[3] SOM, School of Medicine

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

***** Also offered Online***
Note: Courses offered online require students to establish an eLearning account and to complete the free "Introduction to Online Learning" course prior to the term in which the course is taken. For instructions go to:
http://distance.jhsph.edu/iol/

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:

https://apps4.jhsph.edu/academicethics
This module should be completed within two terms of matriculation and must be completed before graduating.

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Department of Environmental Health Sciences
PhD in Toxicology - Academic Year 2010-11
Core Curriculum Requirements - Year 1

First Term

Course Number	Course Name	Day/Time	Units
100.709 *(SOM)*	Macromolecular Structure Analysis	TTh 9:00 - 10:30 (Sept-Oct; one week overlap with Mol Bio. & Genomics)	3
180.609	Principles of Environmental Health I	MW 1:30 - 3:20	4
187.610	Public Health Toxicology	WF 3:30 - 4:50	4
187.840	Special Studies & Research	days vary	variable
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
187.861	Toxicology Seminar	T 3:00 - 4:00	2
550.600	Responsible Conduct of Research	W 3:30 - 5:20	1

Second Term

Course Number	Course Name	Day/Time	Units
180.610	Principles of Environmental Health II	TTh 8:30 - 10:20	4
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
187.632	Toxicology: The Molecular Basis	MWF 10:30 - 11:50	4
187.840	Special Studies & Research	days vary	
187.861	Toxicology Seminar	T 3:00 - 4:00	2
260.709 *(SOM)*	Molecular Biology and Genomics	MWF 9:00 - 10:30 (Oct.- Dec.)	3
550.865	Public Health Perspectives on Research	Online	2

Third Term

Course Number	Course Name	Day/Time	Units
187.621	Public Health Toxicology: Advanced Topics	M 4:20 - 5:20	1
187.630	Bioanalytical Toxicology	TTh 10:30 - 11:50	4
187.840	Special Studies & Research	days vary	
187.861	Toxicology Seminar	T 3:00 - 4:00	2
360.728 *(SOM)*	Pathways and Regulation	TTh 9:00-10:30 (Jan 4 - March 1)	3
340.703 *(SOM)*	Cell Structure and Dynamics	MWF 9-10:30 (Jan 24 - March 4)	3

Fourth Term

Course Number	Course Name	Day/Time	Units
187.621	Public Health Toxicology: Advanced Topics	M 4:00 - 5:20	1
183.631	Fundamentals of Human Physiology	Online	4
187.620	Environmental Toxicological Pathology	WF 3:30 - 4:50	3
187.641	Immunology of Environmental Disease	MW 1:30 - 2:50	3
187.661	Environmental Health in Neurological and Mental Disorders	TTh 10:30-11:50	3
187.840	Special Studies & Research	days vary	
187.861	Toxicology Seminar	T 3:00 - 4:00	2

[1] Must be taken in each quarter during entire training period.

[2] This course, which includes the research rotations, is taken in each quarter until a trainee passes his/her Graduate University Board Oral Exam and begins a thesis project. These trainees then register for Thesis Research, Toxicological Sciences for the remainder of their time in the program.

[3] SOM, School of Medicine

*** Check current schedule for all course and/or lab times:**
http://commprojects.jhsph.edu/courses

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:
https://apps4.jhsph.edu/academicethics

This module should be completed within two terms of matriculation and must be completed before graduating.

Department of Environmental Health Sciences
PhD in Toxicology - Academic Year 2010-11
Core Curriculum Requirements - Year 2

First Term

Course Number	Course Name	Day/Time	Units
187.840	Special Studies & Research	days vary	15
187.861	Toxicology Seminar	T 3:00 - 4:00	2
550.600	Responsible Conduct of Research	W 3:30-5:20	1

Second Term

Course Number	Course Name	Day/Time	Units
187.840	Special Studies & Research	days vary	15
187.861	Toxicology Seminar	T 3:00 - 4:00	2
550.600	Responsible Conduct of Research	W 3:30-5:20	1

Third Term

Course Number	Course Name	Day/Time	Units
140.615	Statistics for Laboratory Scientists I	MWF 10:30 - 11:20	4
187.840	Special Studies & Research	days vary	15
187.861	Toxicology Seminar	T 3:00 - 4:00	2
550.600	Responsible Conduct of Research	W 3:30-5:20	1

Fourth Term

Course Number	Course Name	Day/Time	Units
140.615	Statistics for Laboratory Scientists I	MWF 10:30 - 11:20	4
187.840	Special Studies & Research	days vary	15
187.861	Toxicology Seminar	T 3:00 - 4:00	2
550.600	Responsible Conduct of Research	W 3:30-5:20	1

DrPH PROGRAM

DrPH DEGREE PROGRAM

PROGRAM DESCRIPTION

The DrPH Program educates senior level professionals the biomedical sciences, behavioral sciences, epidemiology and biostatistics, legal, economic and social issues, engineering technologies, management concepts and communication skills. DrPH graduates are leaders and innovators in environmental health sciences in local, regional, national and international settings. They analyze and assess complex environmental risks and problems and design and implement intervention strategies that reduce risks and resolve environmental problems. DrPH graduates are highly skilled practitioners who can comprehend and integrate the many dimensions of environmental health sciences, define the disciplines that can best be applied to a problem, make sound and critical judgments, implement proactive change in industry, government and academia.

The School has established minimum requirements for completion of the DrPH degree, which are in addition to those set by the Department of Environmental Health Sciences for doctoral programs.

Degree Requirements

For the DrPH program, the School of Public Health defines a set of minimum requirements, upon which the Department and division can impose additional requirements for specific degrees and degree programs. It is the student's responsibility to know and understand these requirements. In general, the requirements include a certain amount of formal course work (see required course list), a written comprehensive examination, a preliminary oral examination, an acceptable thesis, and a final oral examination. School requirements for the DrPH degree are discussed in the DrPH program's PPM Academic Programs - 3, which can be obtained from the Registrar or the EHS Academic Program Manager and on-line at:
https://my.jhsph.edu/Resources/PoliciesProcedures/ppm/Pages/default.aspx.

While this handbook can summarize key parts of the DrPH program and its requirements, the PPM is the authoritative source for the program.

For issues regarding modification and waiver of School DrPH requirements, approval must first be obtained from the advisor, the EHS DrPH program director, the Department chair, and finally, the School's DrPH Program director. For issues regarding EHS requirements, the process is the same but does not require DrPH Schoolwide program approval. All waiver requests and approvals must be forwarded to the EHS Academic Program Manager's office.

Academic Plan

Every DrPH student must design an individual Academic Plan during their first term that fulfills formal course work requirements. This Academic Plan will also identify additional courses that are appropriate for the student, given the student's interests and future career goals. The Academic Plan must be approved by the advisor and the EHS DrPH Program Director. Waivers of program requirements must be approved by the advisor, the EHS DrPH Program Director, and the School-wide DrPH Committee. The Academic Plan is a very important tool that is used to guide the course work and thesis requirements for DrPH students. Amendments are allowed and are approved in the same way as the original Academic Plan.

The Academic Plan must have sections that describe career goals, the competencies required for those career goals, the courses that must be taken to achieve the stated competencies, and how the thesis and other experiences will contribute to the career goals and competencies.

Part-time Status

The focus of the DrPH program is on the preparation of graduates for leadership careers in the practice of public health. Therefore, the program encourages both the recruitment of practicing professionals and the ongoing involvement of DrPH candidates with health agencies and organizations. A student may request part-time status by developing and presenting a sound academic plan for degree completion to their advisor and the EHS DrPH director. Upon approval from the advisor, the EHS DrPH director, and the School-wide DrPH Committee, the student's status would be updated to part-time.

Part-time status may be requested at anytime during a full-time student's academic career. DrPH students in approved part-time status have up to nine academic years to complete the program and must register on a continuous basis for a minimum of 1 unit per term.

Employer-Department-Student Relationship

If the student chooses to seek employment or remain employed in a public health position during his/her academic career, the candidate and his/her advisor must discuss the academic plan with the employer. The candidate must work with the advisor and the employer to plan work schedules and academic plans to avoid delays in completion of the degree program. In addition, the student must obtain consent if they intend to use the employer's data and acquire all IRB or other approvals to conduct research.

ORAL AND WRITTEN EXAMINATIONS AND PROCEDURES

Written Comprehensive Examination: The comprehensive written examination is taken when the student completes his/her required coursework, generally 12-18 months into the program. In order to be eligible to sit for the comprehensive written examination, the student must have a grade point average of 2.75 or better.

Notification: The advisor shall be responsible for reviewing this policy with each new DrPH student at the time of their enrollment and upon scheduling the comprehensive examination.

Scheduling: Generally, comprehensive written exams are given in June and December. Students with special circumstances may request an alternate administration, with approval of the advisor and DrPH Program Director.

Examination Content: The written comprehensive examination focuses on testing concepts and fundamental knowledge that all DrPH graduates of the Department of Environmental Health Sciences are expected to master. Examinations generally cover five broad topical areas:

1. Policy frameworks for national and international standards

2. Evaluation of the weight of scientific evidence (epidemiology, toxicology, study design, research strategy and statistics)

3. Risk Assessment, Risk Management and Risk Communication

4. Knowledge of occupational health and hygiene, including pollution sources, pathways, interventions and practices; and

5. Environmental health program development, planning, implementation and management.

Questions will be structured to discern the student's knowledge of environmental health and ability to integrate concepts across all environmental health disciplines. In addition, the exam will be designed to test students' comprehension of epidemiology, biostatistics, social and behavioral health, law and regulations, health policy and management, and leadership.

The exam will be offered at least once a year and is scheduled by the EHS DrPH Program Director. It is strongly advised that the student focus full time on the examination during the examination period, and scheduling competing activities for this period is highly discouraged.

Responsibilities: In conjunction with the EHS DrPH committee, the EHS DrPH Program Director coordinates writing, administering, grading, and scoring the examination. Traditionally, the EHS program director has selected several faculty members of the EHS DrPH committee as grading faculty. Additionally, it is the responsibility of the EHS DrPH Director to furnish complete documentation of the examination and passing status to the Registrar, the student, and the student file (EHS Academic Program Manager file).

Grading: Each of the assigned DrPH Committee faculty will independently grade the examinations, scoring questions that they feel sufficiently qualified to judge, using the criteria set out below as a guide:

Criteria for Evaluation of DrPH Written Comprehensive Examinations
Score Definition

100 Superb: Response is thorough, complete, and correct; beyond expectation. This is a rare and exceptional grade.

90-99 Excellent: Response is thorough, complete and correct with only very minor errors or omissions.

80-89 Very good: Response thoroughly covers the major facets of the question but lacks rigor and completeness with respect to details.

70-79 Good: Response adequately covers most of the major facets of the question but lacks rigor and completeness with respect to details.

60-69 Poor: Response covers correctly and completely some of the content/ principles but with some major omissions. Response is incomplete and carelessly prepared.

<60 Failure: Response is incomplete and incorrect. Unacceptable.

Criteria for Passing: The scores assigned by DrPH grading faculty will be averaged for each question. In order to pass the examination without conditions, the student must receive an average score of 70 or greater on each question. A student failing one or two questions shall be assigned a conditional pass. Students receiving a conditional pass shall be required to carry out additional work. The EHS DrPH Committee will evaluate the type and nature of additional work needed for the student to pass the examination without conditions. A student failing more than two questions on the examination is considered to have failed the entire examination and must retake it.

If the student fails the written comprehensive examination, the student can either withdraw from the DrPH program or retake the examination. Only only one reexamination is permitted. A student failing to pass a second examination shall be automatically removed from the EHS DrPH program.

Communication of Results: The EHS DrPH Program Director and the student's advisor are expected to communicate the results of the examination to the student, the EHS Academic Program Manager and the Office of the Registrar. As a part of this communication, the advisor or DrPH program director can review the answers to the examination with the student.

DrPH SCHOOL-WIDE PRELIMINARY ORAL EXAMINATION

The DrPH Preliminary Oral Examination is administered by the School's DrPH Executive Committee and determines whether the student has both the ability and knowledge to undertake significant research in his/her specialized area of interest. It is required of all DrPH students.
The exam must be taken no later than the end of the student's third year in residence after the full-time residency is completed, and before significant engagement in dissertation research.

This exam is different from a Departmental Preliminary Oral Examination, which is optional but recommended.

The student and his/her advisor are responsible for initiating arrangements for this examination. The departmental Academic Program Manager will assist with the appropriate forms and other important information. Requests for the exam must be sent to the Office Records and Registration at least four weeks prior to the examination.

The committee shall consist of five voting members. Not more than three members of the primary department can serve, and one of these must be the thesis advisor. A minimum of three Departments of the University, at least two being from the School of Public Health, must be represented. At least one member must hold neither a primary nor joint appointment in the student's department. A full-time faculty member from outside the student's major department will normally serve as chairperson and must hold the rank of Full or Associate Professor at The Johns Hopkins University. The fifth member on the preliminary oral committee must have professional practice experience related to the public health problem addressed by the student. The fifth member is not necessarily a faculty member of The Johns Hopkins University, and will be approved to serve on the Committee by the School-wide DrPH Program Director, based on a submitted Curriculum Vita.

The Committee member fulfilling this practice experience must be explicitly designated on examination forms. Two faculty alternates will be designated—one from inside and the other from outside the Department. Each must have a current appointment as Assistant Professor or higher in the JHU Department or program. A third alternate with professional experience may also need to be designated if neither of the first two alternates fulfills this requirement.

Immediately following the examination, the committee evaluates the success or failure of the student by a closed ballot prior to any discussion. If the student fails the exam and is permitted a reexamination, he/she must be reexamined within one year.

All DrPH students are required to prepare a thesis proposal for use during the oral examination. This proposal typically consists of a description of the specific aims of the proposed research, the appropriate background and significance, proposed design and methods, and any preliminary data in-hand before the oral examination. The thesis format can take the form of a traditional thesis or publishable manuscript option, described below.

Thesis Outline

The DrPH dissertation demonstrates the student's capacity for public health problem-solving. Its specific content is to be developed by the student in consultation with the advisor and the research committee. The DrPH dissertation should deal with a real-life problem that a community or public health agency is trying to address. These usually involve one or more aspects that constitute the areas of competencies guiding the DrPH Program:

- Identification and Assessment of the Public Health Problem
- Determination of Factors Contributing to the Public Health Problem
- Development of Intervention Strategies
- Implementation of Intervention Strategies
- Monitoring and Evaluation of a Program

The dissertation should provide new applied information to enable policy makers to make an informed decision that will address a public health problem. This may take a variety of forms, including but not limited to collecting new data, compiling and analyzing existing data, pilot testing a proposed intervention strategy, assessing previous policies, efforts, and/or regulations to deal with the problem. Based on the new information generated by the dissertation, and taking into consideration community characteristics such as political, economic, and social factors, the student should make a recommendation as to what decisions should be made. Most DrPH dissertations include the following general content:

- A statement of the environmental health problem to be addressed
- A critical review of the scientific literature relevant to that problem
- An analysis of the social, economic, political, and/or cultural context for the problem
- A description of the analytic methods and data sources used in making recommendations for the solution of the problem
- The analytic results and their implications for the problem under study
- A strategy for implementing and evaluating the recommendations.

Thesis Research Committee

Soon after the student selects his/her thesis advisor, generally around the time of the preliminary oral examination and before the preparation of the thesis proposal, a Thesis Research Committee will be constituted. This committee consists of the thesis advisor and at least two other faculty members, from inside or outside of the EHS Department; a part-time adjunct faculty member or a non-faculty member may serve as one of the members of this committee.

These other individuals may be different from those who will later serve as thesis readers and/or members of the Thesis Readers Committee (see below). Their function will be to facilitate the progress of the student in the completion of his/her thesis project, to assist the thesis advisor in providing suggestions and critical feedback to the student, and to provide a measure of consistency and continuity for the student. Membership of the Dissertation Advisory Committee may change as dictated by the needs of the student and the direction of the research.

The Thesis Committee will meet with the student at least twice a year from the time of the preliminary oral examination until the final defense. The thesis advisor will forward a brief written report of these meetings, with recommendations to the EHS Academic Program Manager by October 1 and April 1 of each year. A copy of this report will be given to the student. These reports will be used by departmental administration to review student progress during the research period of the student's program, and will demonstrate continued eligibility for student support, if applicable.

Thesis Readers Committee

The composition of the DrPH Thesis Readers Committee includes at least one reader other than the advisor having professional practice experience related to the public health problem addressed in the dissertation. This reader, who may or may not hold a faculty appointment with the University, shall be identified to the Office of Records and Registration during the process of constituting the committee and will be approved to serve on the committee by the School's DrPH Program Director, based on a submitted Curriculum Vita. The committee member fulfilling this practice experience must be explicitly designated on examination forms.

Please refer to the DrPH Policies and Procedures Manual (PPM) regarding policies relating to the thesis and final oral exam. The EHS Academic Program Manager can assist with the identification of deadlines and completion of necessary forms.

Publishable Manuscripts Option

Doctoral students have the option of submitting publishable manuscripts as an alternative to the traditional dissertation. The publishable manuscript option is often preferred as it offers the opportunity to develop skills in scientific or professional journal preparation.

A manuscript-oriented dissertation must meet the following criteria:

1. Two manuscripts must be linked to a common theme.

2. The doctoral student must be the first author on the two manuscripts.

3. A manuscript will not be accepted as part of the dissertation if it is submitted before the student's dissertation topic is approved by the Thesis Research Committee. All manuscripts to be submitted must have been reviewed by members of the Thesis Research Committee.

4. The manuscripts must be found acceptable for publication according to the internal peer review process.

5. The dissertation, which includes two (or more) publications, should be organized as follows. The body of the dissertation should include a series of at least two papers that are linked to a common theme (i.e., the student's dissertation topic).

The first chapter should be a comprehensive critical literature review suitable for publication. Chapters two and three (and possibly four) are the papers with a transitional short chapter between each relating one to the other. The final chapter should integrate and discuss the findings reported in the papers. It should include a discussion of the conclusions and environmental health implications of the findings of the research.

6. The dissertation should include an appendix outlining in detail the study methods and any accompanying data tables deemed necessary to fulfill School policies.

DATA COLLECTION AND LABORATORY EXPERIENCE

Although the Department of Environmental Health Sciences has strong laboratory-based research efforts, neither laboratory research nor the de novo collection of data is a requirement of the DrPH thesis.

It is well recognized that many DrPH students are mid-career professionals working for governmental or industrial organizations in areas relevant to environmental health. It is anticipated that a number of research proposals and their associated investigational and/or developmental endeavors will involve an extension of these professional activities. The proprietary nature of the data collected in these situations and the uniqueness of the data collection to the student's proposal will be closely scrutinized and evaluated by the program.

All DrPH students proposing research on human subjects must have approval by the Committee on Human Research (CHR) before starting the research. All DrPH students participating in projects that have already received CHR approval should ask the advisor or principal investigator to inform the CHR of the student's addition to the project.

SEMINARS AND JOURNAL CLUB OPPORTUNITIES

A monthly seminar is scheduled, usually during lunchtime, especially for DrPH students. Topics focus on the analysis of public health problems. The seminar presentations feature student and faculty research, discussions by environmental health practitioners, and other presentations relevant to environmental health problem-solving. In addition to seminars offered by the academic divisions and programs, the Department's Research Enrichment Committee also offers monthly departmental seminars that focus on research topic areas that span the interests of the Department. All EHS students, fellows and faculty are invited.

Department of Environmental Health Sciences
Doctor of Public Health (DrPH) - Academic Year 2010-11
School-Wide Requirements

DrPH Students must have completed either a MPH at Johns Hopkins or equivalent coursework. Equivalency will be determined first by student and advisor and any waivers will be approved by the EHS DrPH Program Director (School-wide requirement). Milestones for tracking progress waiver forms, as well as other necessary forms can be found at: ***http://www.jhsph.edu/dept/ehs/people/students/student_forms.html***
Students entering the DrPH needing to fulfill the EHS MPH requirement must select one course combination from the following:

Course Number	Course Name	Day/Time	Term	Units
180.601	Environmental Health ***OR***	MWF 1:30 - 3:20 **OR** Online	Summer **OR** 3	5
180.609	Principles of Environmental Health I ***AND***	MW 1:30 - 3:20	1	4
180.610	Principles of Environmental Health II	TTh 8:30 - 10:20	2	4

I. Ethics
DrPH students must take at least 3 units from the following courses.
Please note: DrPH students who receive NIH funding are required to take either 550.600 or 306.665 as part of their ethics requirement.

Course Number	Course Name	Day/Time	Term	Units
221.616	Ethics of Public Health Practice in Developing Countries	M 1:30 - 3:20	4	2
306.655	Ethical Issues in Public Health *(Note: Every other year)*	MW 10:30 - 11:50	4	3
306.663	Legal and Ethical Issues in Health Services Management	T 9:00 - 11:50	3	3
306.665	Research Ethics and Integrity: U.S. and International Issues	TTh 1:30 - 2:50	3	3
550.600 or 550.860.82	Responsible Conduct of Research *(NIH funded students MUST take this course)* ***OR*** Research Ethics	W 3:30 - 5:20 **OR** Online	1	1

II A. Epidemiology
DrPH students must take either Option IIA or Option IIB below. Option IIA consists of either 340.601 or 550.694.81 and 550.695.81 plus **ANY** additional epidemiology course. Option IIB includes all three courses listed.

Course Number	Course Name	Day/Time	Term	Units
340.601	Principles of Epidemiology ***OR***	MWF 8:30 - 9:20 * MWF 8:30 - 9:20 * TBA *	1 Summer Summer Institute	5
550.694.81	Fundamentals of Epidemiology I ***AND***	Online *	1	3
550.695.81	Fundamentals of Epidemiology II ***AND***	Online *	2	3
	One additional course in Epidemiology			

II B. Epidemiology continued

Course Number	Course Name	Day/Time	Term	Units
340.751	Epidemiologic Methods 1 ***AND***	MWF 8:30 - 9:50 *	1	5
340.752	Epidemiologic Methods 2 ***AND***	MWF 8:30 - 9:50 *	2	5
340.753	Epidemiologic Methods 3	MWF 8:30 - 9:50 *	3	5

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Department of Environmental Health Sciences
Doctor of Public Health (DrPH) - Academic Year 2010-11
School-Wide Requirements

III A. Biostatistics

DrPH students must take all four of the following courses *OR* all listed III B:

Course Number	Course Name	Day/Time	Term	Units
140.621 †	Statistical Methods in Public Health I **	TTh 10:30 - 11:50 *	1	4
140.622 †	Statistical Methods in Public Health II **	TTh 10:30 - 11:50 *	2	4
140.623 †	Statistical Methods in Public Health III **	TTh 10:30 - 11:50 *	3	4
140.624 †	Statistical Methods in Public Health IV **	TTh 10:30 - 11:50 *	4	4

† ***The Biostatistics series 140.651 − 654 may be used as a substitute.***

III B. Biostatistics continued

Course Number	Course Name	Day/Time	Term	Units
140.611	Statistical Reasoning in Public Health I	TTh 10:30 - 11:50 ***OR*** Online ***OR*** TBA	1 ***OR*** 1 ***OR*** Summer	3
140.612	Statistical Reasoning in Public Health II	TTh 10:30 - 11:50 ***OR*** Online ***OR*** TBA	2 ***OR*** 2 ***OR*** Summer Institute	3
140.613	Data Analysis Workshops I	TBA	Summer Institute	2
140.614	Data Analysis Workshops II	TBA	Summer Institute	2
140.620	Advanced Data Analysis Workshop	TBA	Summer Institute	2
140.624	Statistical Methods in Public Health IV **	TTh 10:30 - 11:50 *	4	4

IV. School-Wide DrPH Seminar

DrPH students are required to attend 8 sessions of the School-wide DrPH Seminar and are encouraged to attend all sessions.

Course Number	Course Name	Day/Time	Term	Units
No course number	DrPH School-wide Seminar	TTh 10:30 - 11:50	1 thru 4	0

V. Leadership

DrPH students must take at least one of the following courses:

Course Number	Course Name	Day/Time	Term	Units
380.681.01	Strategic Leadership Principles and Tools for Health System Transformation in Developing Countries ***OR***	Th 5:30 - 7:20	2	4
551.610.01	Foundations of Leadership - A Leadership Survey Course	W 3:30 - 6:20 ***OR*** T 3:30 - 6:20 ***OR*** TBA	2 ***OR*** 3 ***OR*** Summer Institute	3

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Department of Environmental Health Sciences
Doctor of Public Health (DrPH) - Academic Year 2010-11
School-Wide Requirements

VI. Health Policy

DrPH students must take at least one policy course from the following: (other courses may be substituted with approval from the DrPH Executive Committee)

Course Number	Course Name	Day/Time	Term	Units
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
300.600.81	Introduction of Health Policy	Online	1	4
300.652	Politics of Health Policy	F 8:00 - 11:50	3	4
300.711	Health Policy I: Social and Economic Determinants of Health	TTh 9:00 - 10:20	1	3
300.712	Health Policy II: Public Health Policy Formation	TTh 9:00 - 10:20	2	3
300.713	Health Policy III: Research and Evaluation Methods for Health Policy	TTh 9:00 - 1:20 *	3	4
306.650	Public Health and the Law	T 3:30 - 6:20 ***OR*** TBA	3 ***OR*** Summer Institute	3
309.670	Comparative Health Insurance	MW 3:30 - 4:50	3	3
380.624	Maternal and Child Health Legislation and Programs	TTh 1:30 - 3:20	2	4

VII. Management Sciences

DrPH students must take three units from the following courses in addition to the MPH Management requirement:

Course Number	Course Name	Day/Time	Term	Units
221.706	Managing Health Systems in Developing Countries I ***AND***	Online	3	2
221.707	Managing Health Systems in Developing Countries II	Online	4	3
221.722.81	Quality Assurance Management Methods for Developing Countries	MW 1:30 - 3:20 ***OR*** Online	1	4
312.615	Organizational Behavior and Management	MW 10:30 - 11:50	4	3
551.601	Managing Health Services Organizations ***AND***	TTh 8:30 - 10:20 ***OR*** Online	1 ***OR*** 3	4
551.602	Approaches to Managing Health Service Organizations: Cases and Applications	W 10:00 - 11:50 ***OR*** TBA	1 ***OR*** Summer Institute	2
551.603	Fundamentals of Budgeting and Financial Management	M 3:30 - 5:50 ***OR*** Internet ***OR*** TBA	2 ***OR*** 3 ***OR*** Summer Institute	3
551.605	Case Studies in Management Decision-Making	W 1:30 - 4:20	3	3
551.608	Managing Non-Governmental Organizations in Health Sector	M 5:30 - 8:30	3	3

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Department of Environmental Health Sciences
Doctor of Public Health (DrPH) - Academic Year 2010-11
School-Wide Requirements

Departmental Requirements

Students must take at least six courses in the Department. Most students meet this requirement easily, as eleven courses in the Department are required (five courses, four specialty courses, and two specialized epidemiology courses). Of these ELEVEN courses, no more than FOUR may be waived. In addition to these course requirements, DrPH students are required to attend all divisional and relevant departmental seminars.

Core Departmental Course Requirements

The Department of Environmental Health Sciences has the following requirements for all DrPH students in the Department. Of the five core courses, no more than TWO can be waived with the approval of the advisor and EHS DrPH Director.

Course Number	Course Name	Day/Time	Term	Units
180.609	Principles of Environmental Health I ***AND***	MW 1:30 - 3:20	1	4
180.610	Principles of Environmental Health II ***OR***	TTh 8:30 - 10:20	2	4
180.601	Environmental Health	Online ***OR*** MWF 1:30 - 3:20	3 ***OR*** Summer	5
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
182.625	Principles of Occupational and Environmental Hygiene	TTh 1:30 - 3:20 ***OR*** Online	2 ***OR*** 4	4
187.610	Public Health Toxicology	WF 3:30 - 4:50 ***OR*** Online	1 ***OR*** 2	4
188.680	Fundamentals of Occupational Health	TTh 3:30 - 4:50 ***OR*** Online	1	3

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Doctor of Public Health (DrPH) - Academic Year 2010-11
School-Wide Requirements (cont'd)

Specialty EHS Courses

In addition to required courses, at least four of the departmental or other EHS DrPH-related courses are also required. Of the four courses that must be taken, no more than two can be waived with the approval of the advisor and the EHS DrPH Program Director.

Sample Specialty EHS Courses with Occupational Concentration

Course Number	Course Name	Day/Time	Term	Units
182.621	Introduction to Ergonomics	F 8:30 - 11:50	2	4
182.623	Occupational Safety and Health Management	M 1:30 - 3:50	3	3
188.681	Occupational Health	M 8:30 - 11:50 W 8:30 - 4:50	4	5
188.686	Clinical Environmental and Occupational Toxicology	WF 1:30 - 2:50	3	3
188.694	Occupational Health and Vulnerable Worker Populations	T 9:00 - 11:50 ***AND*** Online	4	3

Sample Specialty EHS Courses with General Environmental Health Concentration

Course Number	Course Name	Day/Time	Term	Units
180.611	The Global Environment and Public Health	TTh 8:30 - 10:20	1	4
180.631	Environmental and Occupational Health Policy Seminar	Th 3:30 - 6:20	4	3
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
183.641	The Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	4	3
305.607	Public Health Practice	MW 1:30 - 3:20 ***AND*** Online ***AND*** TBA	2 ***AND*** 4 ***AND*** Summer Institute	4

Specialized Epidemiology Courses

In addition to required and specialty courses, ONE of the following epidemiology courses are required:

Course Number	Course Name	Day/Time	Term	Units
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 2:30 - 3:50	3	4
340.618	Occupational Epidemiology *(Note: Every other year)*	TTh 1:30 - 2:50	4	4
340.637	Environmental Epidemiology *(Note: Every other year)*	TTh 1:30 - 2:20	3	2

*** Check current schedule for all course and/or lab times:**

http://commprojects.jhsph.edu/courses

**** Also offered Online** Note: Courses offered online require students to establish an eLearning account and to complete the free "*Introduction to Online Learning* " course prior to the term in which the course is taken.
For instructions go to:

http://distance.jhsph.edu/iol/

In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:
https://apps4.jhsph.edu/academicethics
This module should be completed within two terms of matriculation and must be completed before graduating.

NON-DEGREE & CONTINUING EDUCATION

NON-DEGREE AND CONTINUING EDUCATION

POSTDOCTORAL FELLOWSHIPS

The Department of Environmental Health Sciences accepts applications for postdoctoral fellows (PDF). Applications, including notification of official degree completion and other required documents, must be completely processed before a postdoctoral student may be accepted. The postdoctoral fellowship program provides concentrated training with individual faculty from the Department. Postdoctoral programs are open to qualified individuals with a health sciences/ biology background. Interested applicants should follow application procedures as specified by the Office of Admissions, available at ***www.jhsph.edu/GER/postdocs.html*.**

Postdoctoral fellows should register in person or online through the Records and Registration Office in the initial term and during each established registration period thereafter. Summer registration is not required. A PDF must register for a minimum of 16 credits per term. The 16 credits may be a combination of Postdoctoral Research through the appropriate division (###.830) and courses of interest to the PDF. PDFs are not permitted to earn more than 16 credits of didactic course work for academic credit during their tenure as a postdoctoral fellow. However, this 16 credit limit may be extended for some special postdoctoral training programs if prior approval is obtained from the School's Committee on Academic Standards. Even in cases where an exception to the 16 credit limit has been granted, only 16 credits can be transferred to meet degree program requirements. There is no limit on the number of courses a fellow may audit. The PDF's advisor should approve the registration request each term. A complete description of the policies related to postdoctoral fellows is available at: ***https://my.jhsph.edu/Resources/PoliciesProcedures/ppm/Pages/default.aspx*.**

CERTIFICATE PROGRAMS

Three certificates are offered by the Department of Environmental Health Sciences:

- Certificate in Environmental and Occupational Health
- Certificate in Health and Human Rights
- Certificate in Humane Sciences and Toxicology Policy

CERTIFICATE PROGRAM IN ENVIRONMENTAL AND OCCUPATIONAL HEALTH

Educational Objectives:
The certificate program educates and trains students to identify major environmental health issues facing public health professionals today. Courses explore the sources of environmental agents, their distribution in community and work environments, transfer routes to humans and possible health effects; the basic biological mechanisms underlying the association between prior exposure and subsequent development of adverse health effects; and control strategies and interventions.

Intended Audience:
The program is intended for public health professionals currently practicing in environmental/ occupational health or other areas of public health who seek formal training, current degree candidates in the School outside of the sponsoring department, and non-degree candidates who wish to begin their formal training in environmental health. A selection of online courses is available for students who wish to pursue the certificate via the Internet.

Admissions Criteria:
The program is open to any student qualified to register as a Special Student Limited, Special Student Regular or JHU degree candidate outside of the Department of Environmental Health Sciences. Students registered as a Special Student Limited, however, may pursue courses in only one certificate in the School due to enrollment restrictions. Admission to the Department as a Special Student Regular or degree candidate is required for individuals who wish to enroll in coursework beyond that required by the Certificate Program.

All students pursuing the Certificate should contact the Department's Academic Program Manager to inform the Department of their intent to pursue the certificate so that arrangements can be made to meet with a program director and discuss course options. This notice must be submitted in writing as soon as possible, but no later than the first week of the term in which the final course will be taken.

Requirements for Successful Completion:

- Courses must be taken for academic credit to count toward the certificate.
- A letter grade of "C" or better must be earned in all courses.
- A cumulative GPA of at least 2.50 must be achieved

For more information contact the Faculty Sponsor, Dr. Jacqueline Agnew, 410-955-4037; *jagnew@jhsph.edu*; or the EHS Academic Program Manager, Nina Kulacki at 410-955-2212, *nkulacki@jhsph.edu*, Office E7039.

Department of Environmental Health Sciences
Certificate Program in Environmental and Occupational Health
Academic Year 2010-11

Course of Study

A minimum of 18 units must be earned in the courses listed below. All students are required to complete three of the following four courses:

Course Number	Course Name	Day/Time	Term	Units
180.601	Environmental Health ***OR***	Online OR MWF 1:30 - 3:20 *	3 ***OR*** Summer	5
180.609	Principles of Environmental Health I	MW 1:30 - 3:20	1	4
182.625	Principles of Occupational and Environmental Hygiene	TTh 1:30 - 3:20 ***OR*** Online *	2 ***OR*** 4	4
187.610	Public Health Toxicology	WF 3:30 - 4:50 ***OR*** Online	1 ***OR*** 2	4
188.680	Fundamentals of Occupational Health	TTh 3:30 - 4:50 ***OR*** Online *	1	3

Additional courses (total units for certificate must equal at least 18):

Course Number	Course Name	Day/Time	Term	Units
180.601	Environmental Health (unless 180.609 is taken) ***OR***	Online ***OR*** MWF 1:30 - 3:20 *	3 ***OR*** Summer	5
180.609	Principles of Environmental Health I (unless 180.601 is taken)	MW 1:30 - 3:20	1	4
180.628	Introduction to Environmental and Occupational Health Law ***OR***	Online	4	4
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 4:50 *	3	4
180.604	Introduction to Environmental Health Practice	TTh 1:30 - 2:50	4	4
180.611	Global Environment and Public Health	TTh 8:30 - 10:20	1	4
180.620	Food Production, Public Health and the Environment	Online	2	4
180.640	Molecular Epidemiology and Biomarkers in Public Health	TTh 2:30 - 3:50	3	4
180.641	Methods in Public Health Emergency Preparedness	MW 1:30 - 2:50	3	3
180.650	Fundamentals of Clinical Oncology for Public Health Practitioners	Th 5:30 - 8:00	2	3
180.655	Baltimore Food Systems: A Case Study of Urban Food Environments	MW 10:30 - 11:50	4	3
180.670	Introduction to Public Health Emergency Preparedness	TTh 9:00 - 10:20	3	3
182.615	Airborne Particles	F 9:30 - 11:50	4	3
182.621	Introduction to Ergonomics	F 8:30 - 11:50	2	4
182.622	Ventilation Controls	F 1:00 - 5:20	4	4
182.623	Occupational Safety and Health Management	M 1:30 - 3:50	3	3
182.625	Principles of Occupational and Environmental Hygiene	TTh 1:30 - 3:20 * ***OR*** Online	2 ***OR*** 4	4

(continued on next page)

Department of Environmental Health Sciences
Certificate Program in Environmental and Occupational Health (cont'd)
Academic Year 2010-11

Course Number	Course Name	Day/Time	Term	Units
182.626	Issues for Water and Sanitation in Tropical Environmental Health	T 8:30 - 10:20	3	2
182.631	Principles of Occupational Safety	F 1:30 - 3:30	1	2
182.637	Noise and Other Physical Agents in the Environment	WF 1:30 - 3:20 ***OR*** Online	2 ***OR*** 4	4
182.638	Environmental and Health Concerns in Water Use and Reuse	WF 8:30 - 10:20	4	4
182.640	Food- and Water-Borne Diseases	TTh 1:30 - 2:50	3	3
183.631	Fundamentals of Human Physiology	MW 1:30 - 3:20 * ***OR*** Online	2 ***OR*** 4	4
183.641	Health Effects of Indoor and Outdoor Air Pollution *(Note: Every other year)*	TTh 1:30 - 2:50	4	3
187.610	Public Health Toxicology	WF 3:30 - 4:50 ***OR*** Online	1 ***OR*** 2	4
187.625	Animals in Research: Law, Policy and Humane Sciences	Online	4	2
187.641	Immunology of Environmental Disease	MW 1:30 - 2:50	4	3
188.680	Fundamentals of Occupational Health *	TTh 3:30 4:50 ***OR*** Online	1	3
188.681	Occupational Health	M 8:30 - 11:50 ***AND*** W 8:30 - 4:50	4	5
188.682	Buildings, Land Use, Transportation and Public Health	F 1:30 - 3:20	4	2
188.686	Clinical Environmental and Occupational Toxicology	WF 1:30 - 2:50	3	3
188.694	Occupational Health and Vulnerable Worker Populations	T 9:00 - 11:50 * ***OR*** Online	4	3

**** Check current schedule for all course and/or lab times:***
http://commprojects.jhsph.edu/courses

**** Also offered Online**
Note: Courses offered online require students to establish an eLearning account and to complete the free *"Introduction to Online Learning"* course prior to the term in which the course is taken. For instructions go to:
http://distance.jhsph.edu/iol/

+ In addition, all students are required to complete the Academic Ethics Module (online course), which is located at:
https://apps2.jhsph.edu/academicethics
This module should be completed within two terms of matriculation and must be completed before graduating.

CERTIFICATE PROGRAM IN HEALTH AND HUMAN RIGHTS

Educational Objectives:
The Certificate Program in Health and Human Rights is designed to:

- Increase understanding and foster positive attitudes among health professionals regarding the key linkages among human rights ideals, legal guarantees of human rights, and the promotion and protection of public health.

- Elaborate and explain details regarding the vital roles of health professionals in promoting human rights, especially the right to health, and building a "culture" of human rights.

- Build familiarity with international human rights standards, instruments, and the numerous state-based and international laws related to human rights, especially those that impact upon the health of populations and individuals.

- Introduce the skills needed to investigate, analyze, and document abuses of human rights as they relate to health and public health practice.

Intended Audience:
The Certificate Program in Health and Human Rights is open to all enrolled degree candidates from any academic unit within the Johns Hopkins University.

Admissions Criteria:
This program is open to any student with prior admission to a Johns Hopkins University degree program. Interested students must submit a letter to one of the faculty sponsors to request admission. This letter must outline planned courses and an estimated timetable for completion. Please note course choices can be modified if a student's needs change. Students will need prior approval of their faculty adviser to pursue the Certificate.

All students pursuing the Certificate should contact the Department's Academic Coordinator to inform the Department of their intent to pursue the certificate so that arrangements can be made to meet with a program director and discuss course options. This notice must be submitted in writing as soon as possible, but no later than the first week of the term in which the final course is to be taken.

Program Requirements:
Total course credits required for the Certificate are 14 and must include successful completion of all course work and active participation in the Term II Seminar on Health and Human Rights or the Winter Institute course, "Special Topics in Health and Human Rights."

Requirements for Successful Completion:

- A minimum of 14 units of coursework
- GPA of 2.50 or better in Certificate coursework
- Active participation in required seminars

For more information, please contact the Faculty Sponsor, Robert S. Lawrence, 410-614-4590, *rlawrenc@jhsph.edu*, or the Faculty Co-Sponsor, David Stein, 410-614-4590, *dstein@jhsph.edu*, or, Administrative Contact, Darlene Jackson, 410-614-4590, *dmjackso@jhsph.edu*, or the EHS Academic Program Manager, Nina Kulacki, at 410-955-2212; *nkulacki@jhsph.edu*, Office E7039.

Department of Environmental Health Sciences
Certificate Program in Health and Human Rights
Academic Year 2010-11

Course of Study

Required Courses:

Course Number	Course Name	Day/Time	Term	Units
180.636	Human Rights and Health Seminar ***OR***	T 3:30 - 5:20	2	3
550.852	Special Topics in Health and Human Rights: Public Health Implications of Health as a Human Right ***AND***	TBA	Winter Institute	2
340.639	Assessing the Epidemiological Impact of Human Rights Violations	TTh 1:30 - 2:20	4	2

Ethics Requirements: at least one of the three courses in ethics:

(Course times and dates do change: please email the faculty sponsors regarding course conflicts.)

Course Number	Course Name	Day/Time	Term	Units
221.616	Ethics of Public Health Practice in Developing Countries	M 1:30 - 3:20	4	2
306.625	Ethical Issues in Health Policy	F 9:00 - 11:50	2	3
306.665	Research Ethics and Integrity: U.S. and International Issues	TTh 1:30 - 3:20	3	3

Elective Courses: total of at least six units. Includes at least one of the first two electives below:

Course Number	Course Name	Day/Time	Term	Units
301.655	Human Rights for Public Health Practitioners	F 1:30 - 3:20	3	2
306.650	Public Health and the Law	T 3:30 - 6:20	3	3

Additional Elective Courses:

Course Number	Course Name	Day/Time	Term	Units
180.629	Environmental and Occupational Health Law and Policy	MW 3:30 - 5:20	3	4
221.639	Refugee Health Care	Online ***OR***	1 ***OR***	3
301.614	Health Disparities & Cultural Competency	TBA	Summer Institute	3
301.615	Seminar in Health Disparities	M 3:30 - 5:50	2	3
301.627	Understanding and Preventing Violence	MW 10:30 - 11:50	4	3
308.610	The Political Economy of Social Inequalities and Its Consequences for Health and Quality of Life	Th 5:15 - 7:45	3	3
340.705	Advanced Seminar in Social Epidemiology	MW 1:30 - 3:20	3	3
380.756	Poverty, Economic Development, and Health	TTh 8:30 - 10:20	4	4
410.611	Health, Poverty, and Public Policy in the U.S. *(Note: Every other year)*	MW 3:30 - 4:50	1	3

Courses offered online require students to establish an eLearning account and to complete the free *"Introduction to Online Learning"* course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

CERTIFICATE PROGRAM IN HUMANE SCIENCES AND TOXICOLOGY POLICY

Educational Objectives:

- To provide students with an understanding of the principles that govern the relationship between biomedical researchers and laboratory animals;
- To demonstrate the application of transgenic, in-vitro, computational, non-mammalian and non-animal research in toxicology; and
- To illustrate the ways in which humane science and alternatives are used in setting regulatory standards and making environmental health policy decisions.

The Certificate Program will introduce, and explain the application of, the "3Rs," (reduction, replacement and refinement), which are the guiding principles of humane science as well as demonstrate how the use of humane science principles in biomedical research can lead to more robust scientific methodology and knowledge. The Program course of study covers the scientific principles needed to appreciate humane science and identify and evaluate its implications in biomedical research and public health policy. Persons completing the certificate will be well equipped to translate new toxicological knowledge into scientifically credible product safety evaluations and hazard assessments and apply these concepts to environmental health decision making.

Intended Audience:

The certificate program is open to persons who hold undergraduate or graduate degrees in public health or the biomedical sciences. It is also open to any student in a degree-granting program at the University, although it is anticipated that most enrollees will be students at the Bloomberg School of Public Health. Persons who are members of Institutional Animal Care and Use Committees (IACUC) and/or involved in animal welfare issues are encouraged to participate in this certificate program.

Admissions Criteria

This program is open to non-degree and degree students at the Johns Hopkins Bloomberg School of Public Health.

Any student may register and complete the certificate program as a Special Student Limited, however, such students may pursue courses in only one certificate in the School. Admission to the Department as a Special Student Regular or degree candidate is required for individuals wishing to enroll in coursework beyond that required by the Certificate Program.

Degree-seeking students in a master's or doctoral program at the School can also enroll in the Certificate Program as part of their training.

All students pursuing the Certificate should contact the Department's Academic Program Manager to inform the Department of their intent to pursue the certificate so that arrangements can be made to meet with a program director and discuss course options. This notice must be submitted in writing as soon as possible, but no later than the first week of the term in which the final course be taken.

Requirements for Successful Completion

- All courses must be taken for academic credit to count toward the certificate. Only Public Health Toxicology or Statistics for Laboratory Scientists I may be waived for students with prior graduate training in toxicology or biostatistics, respectively. (Only one may be waived.)

- The student must receive a letter grade of "C" or better in all courses.

- The student must have a cumulative grade point average (GPA) of at least 2.25 in the certificate program to receive the certificate.

For information, contact Dr. Paul Locke, 410-502-2525, *plocke@jhsph.edu*; Dr. Alan Goldberg, 410-223-1692, *agoldber@jhsph.edu*; or the EHS Academic Program Manager, Nina Kulacki, 410-955-2212, *nkulacki@jhsph.edu*, Office E7039.

Department of Environmental Health Sciences
Humane Sciences and Toxicology Policy Certificate
Academic Year 2010-11

Course of Study

The Certificate curriculum consists of the successful completion of six courses that provide essential public health knowledge and skills, as well as address critical issues in humane sciences, examines the 3Rs in biomedical research, enhances knowledge about experimental design and analysis, and studies the translational and policy implications of humane sciences.
These courses are:

Course Number	Course Name	Day/Time	Term	Units
180.601 180.609	Environmental Health ***OR*** Principles of Environmental Health I	Online ***OR*** MWF 1:30 - 3:20 MW 1:30 - 3:20	3 ***OR*** Summer 1	5 4
187.610	Public Health Toxicology	WF 3:30 - 4:50 ***OR*** Online	1 ***OR*** 2	4
187.625	Animals in Research: Law, Policy and Humane Sciences	T 3:30 - 5:20 ***OR*** Online	4 ***OR*** Summer	2
187.650	Alternative Methods in Animal Testing	TTh 10:30 - 11:50 ***OR*** Online	3 ***OR*** 4	3
140.615	Statistics for Laboratory Scientists I	MWF 10:30 - 11:20 *	3	4
306.665	Research Ethics and Integrity: U.S. and International Issues	TTh 1:30 - 2:50	3	3

*** Check current schedule for all course and/or lab times:**

http://commprojects.jhsph.edu/courses

Note: Courses offered online require students to establish an eLearning account and to complete the free " *Introduction to Online Learning"* course prior to the term in which the course is taken. For instructions go to:

http://distance.jhsph.edu/iol/

RESOURCES & ADMINISTRATIVE INFORMATION

ADMINISTRATIVE INFORMATION FOR MASTER'S AND DOCTORAL STUDENTS

ACCOUNTS

Students should monitor their ISIS accounts on a monthly basis so that problems may be resolved in a timely manner. The Department may deposit funds for tuition and certain fees into accounts, but the student is responsible for late charges related to expenses that are not covered by the Department. These changes include late registration fees even when the Department pays for tuition costs. Information regarding student accounts may be found at ***www.jhsph.edu/studentaccts***.

COURSE WAIVERS

Waivers will be considered when a student has taken a similar, graduate-level course(s), with a passing grade, in another division of JHU or another university. "Similarity" shall be based on comparison of the course syllabi by the relevant JHU course director.

The waiver approval process depends on whether or not the program and/or the specific requirement are Department or School-based versus division-based. For Department or School programs or requirements, approval must be granted sequentially by the student's advisor, the program director, and the Department Chair. For divisional program requirements, a waiver approval must be granted sequentially by the student's advisor and the program director.

All waiver requests should be submitted on the appropriate form (see EHS Forms section) to the Department's Academic Program Manager. Once approved, documentation of the waiver will be maintained in the student's file.

FINANCIAL SUPPORT

The Department of Environmental Health Sciences offers a number of predoctoral and postdoctoral fellowship opportunities for U.S. citizens and U.S. permanent residents, which are sponsored by various training grants funded by the National Institutes of Health (NIH), the National Institute for Occupational Safety and Health (NIOSH), and private foundations. These positions include tuition and stipend support for select applicants to programs offered by the Department of Environmental Health Sciences.

The Department also participates with the School in the selection and award of scholarships for the Sommer Scholar Program.

Funding sources are very limited for the MHS programs; however, some candidates for the MHS in Occupational and Environmental Hygiene may be considered for partial tuition support. All students in this program receive tuition scholarships worth up to 75 percent of the School's tuition during the second year of the program.

All qualified applicants are considered for scholarship opportunities. Please note that funding for non-U.S. citizens is very limited. The allocation process is very competitive and funding sources vary each year.

Additional means of financial support may be identified on the School's website at: ***www.jhsph.edu/SFR***. In most cases, admitted students will be notified at the time of acceptance if they are awarded any type of financial support. The amount and type of support will also be specified with the award notification. Students should contact the EHS Business Office at E7523 or 410-955-3537 if they have any questions about their award or accounts.

ENVIRONMENTAL HEALTH SCIENCES STUDENT ORGANIZATION (EHSSO)

EHSSO is the departmental student organization formed with the purpose of facilitating social, intellectual, and service-oriented interaction between students, staff, and faculty of the Department of Environmental Health Sciences. EHSSO unites students from the different disciplines of the Environmental Health Sciences Department and provides a forum for students to voice their concerns and share ideas and research. Networking opportunities, social events, student-sponsored conferences, and lectures are all benefits of EHSSO.

2010-2011 EHSSO Board Members

President
Stephanie Guo, *(yguo@jhsph.edu)*

President Elect
Rachael Zamoiski, *(rdzamois@jhsph.edu)*

Secretary
Yessika Mashinski, (*ymashins@jhsph.edu*)

Treasurer
Jesse Berman, *(jberman@jhsph.edu)*

Divisional Representatives

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Sutyajet Soneja, *(ssonejs@jhsph.edu)*

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Physiology
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Toxicological Sciences
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DrPH Program
Jennifer Hartle, *(jhartle@jhsph.edu)*

Student Assembly Representative
Rebecca Adler, *(radler@jhsph.edu)*

MHS Representatives
TBD

Faculty Advisor
Michael Trush, *(mtrush@jhsph.edu)*

For further information please contact Stephanie Guo, EHSSO President, *ehsso@jhsph.edu*, or visit the EHSSO website at ***www.jhsph.edu/assembly/ehsso***.

REGISTRATION

It is the student's responsibility to register for courses during the appropriate time periods specified by the Office of Records and Registration. The student should discuss their course plans with their advisor before registration and provide documentation of registration to the advisor after registering. Regardless of funding sources such as grants, stipends, etc., students are responsible for any applicable fees if they do not register properly. Specific registration requirements are outlined in some program overviews included in this document.

STANDARDS OF PERFORMANCE

Students are expected to adhere to the policies stated in the EHS Student Handbook and the School's catalog. These policies include those related to grade requirements, registration policies, academic progress, deadlines, satisfactory completion of exams, and the School's Academic Ethics Code. Students who fail to follow or meet the established policies may be subject to dismissal.

STUDENT ASSISTANCE

On occasion, problems may arise between students and other members of the School of Public Health community. The purpose of these guidelines is to set standards to help resolve disputes informally between Department of Environmental Health Sciences students and members of the School. The student is encouraged to make a good faith effort to resolve the dispute informally prior to initiating formal Grievance Procedures. For those disputes that cannot be resolved informally, a Student Grievance Procedure has been created by the School to provide students and student groups with a formal process to seek resolution of a grievance. In certain circumstances, other governing bodies also assist in these situations. A student who has a concern about a decision or act of a faculty or staff member of the Department of Environmental Health Sciences should follow the steps outlined below.

Step 1: The student should first approach the person or parties (e.g. academic advisor, program director, related office, etc.), directly involved as soon as possible to discuss questions or concerns.

Step 2: If the issue or concern is not resolved informally, the student should contact the Department's Deputy Chair for assistance. A written request for problem resolution is requested at this stage. This request should include specific details about the problem, documentation if appropriate, and a suggestion for resolution.

Step 3: If no resolution can be found in prior steps, the matter will be referred to the Departmental Chair, who will address the problem as he/she deems necessary.

Step 4: If the matter is not resolved within the Department or requires review and/or decision at the School or University level, a student should refer to the School's Student Grievance Procedure document if appropriate. A complete copy of the document is available on the Student Academic Support Services website at ***www.jhsph.edu/Student_Life.***

TEACHING ASSISTANTS (TAs)

Teaching Assistant positions provide students with an opportunity to develop their teaching and interpersonal skills, to work professionally with faculty and fellow students, and to contribute service to the Department. Students who would like to TA for a course must obtain approval from their advisor before replying to a TA request. All incoming doctoral students who matriculate AY '08 and beyond are required to serve as a TA for at least one term during their academic program. For most students, this requirement will be fulfilled during the 2nd year; however, the student and their advisor will determine the appropriate time to seek a TA position. Only EHS courses can be used to fulfill this requirement. Students will not receive compensation for serving in a required TA position, but will become eligible for a paid TA position after meeting this requirement. TA positions will be established for selected large courses offered by the Department. Compensation will be provided for these positions at a rate of $2,000 per term. An information packet will be provided to all TAs, and will include information about FERPA, Course Plus, Online Course System, campus resources, and TA roles and responsibilities. TA policy exemption requests should be directed to the Academic Program Manager.

WEATHER EMERGENCIES

A weather emergency is defined as an actual or imminent chance in the atmosphere (e.g., snow, a hurricane, or a tornado) that is serious enough to disrupt the routine academic research service and administrative functions of the University.

The JHU Weather Emergency Line can be reached at 410-516-7781 or 800-548-9004. The JHU Weather Emergency Line provides information on class cancellations and campus closing due to inclement weather. The University may also use the same phone lines occasionally to distribute other urgent information. Weather emergency information is also available at ***http://webapps.jhu.edu/jhuniverse/administration/emergency_weather_security_information/.***

DEPARTMENTAL CONTACT INFORMATION

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