

# THE HARVARD

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## EDUCATION AND RESEARCH CENTER



# 2010-2011 STUDENT HANDBOOK

Website: [www.hsph.harvard.edu/erc](http://www.hsph.harvard.edu/erc)

**HARVARD EDUCATION AND RESEARCH CENTER  
FOR OCCUPATIONAL SAFETY AND HEALTH**

**HARVARD SCHOOL OF PUBLIC HEALTH  
SIMMONS COLLEGE  
BOSTON, MASSACHUSETTS**

The Harvard Education and Research Center for Occupational Safety and Health is a NIOSH-designated training center serving the New England region and the nation.

### **GRADUATE PROGRAMS**

The Center offers graduate training in all disciplines of occupational safety and health: occupational medicine, industrial hygiene, hazardous substances, occupational epidemiology, occupational and environmental molecular epidemiology, occupational health services and injury prevention and control. Both master's and doctoral programs are available.

### **RESEARCH**

Faculty, staff, and students at the Center conduct research related to the cause, prevention and treatment of work-associated safety and health problems. The research includes priorities identified by NIOSH as leading workplace illness and injury.

### **CONTINUING EDUCATION**

The Continuing Education Program, conducted jointly with the Center for Continuing Professional Education, designs and produces professional development programs, conferences, and custom programs for occupational safety and health professionals, paraprofessionals, and technicians. The programs, often co-sponsored with other organizations, are held at the School and at other sites in New England. It is the mission of the Center to develop, present and promote educational opportunities that are timely, relevant, and of the highest quality. To that end, we welcome your comments about how to better serve your needs.

### **OUTREACH**

The visiting scholars program for faculty of other institutions of higher education and other professionals seeks to impact the curricula of other schools and to increase awareness of workplace safety and health issues in government agencies and corporations at the local and state levels.

*Many programs of the Center are funded in part by the National Institute for Occupational Safety and Health (NIOSH).*



1) Photographs of tree thinning in Maine by Earl Dotter:  
[www.earldotter.com](http://www.earldotter.com)

# TABLE OF CONTENTS

## **SOME HISTORY**

**Page 1**

A brief history of occupational safety and health at Harvard University

## **BIOGRAPHIC SKETCHES**

**Page 5**

Interests and endeavors of primary Center personnel

## **SCHOOL CALENDAR**

**Page 12**

The Harvard School of Public Health 2010-11 academic calendar

## **CURRICULA**

**Page 14**

Curricular schemes and requirements and course schedules for 2010-11

## **NON-CREDIT ACTIVITIES**

**Page 25**

Seminars, grand rounds, conferences, continuing education, and professional organizations

## **FINANCES**

**Page 28**

Traineeships, fellowships, and scholarships

## **MISCELLANEOUS INFO**

**Page 30**

Policies, procedures, and resources of the University, School, and Center

*This handbook is produced specifically for ERC students. It is intended to be used as an introduction to the Center, as well as a means of conveying policies to recipients of ERC traineeships. The ERC Student Handbook should be considered a supplement to the Student Handbook of the Harvard School of Public Health, which includes comprehensive information on many matters pertaining to students. (<http://www.hsph.harvard.edu/registrar/handbook/index.shtml>)*

**September 3, 2010**

# The Harvard

EDUCATION AND RESEARCH CENTER

## SOME HISTORY

### OCCUPATIONAL SAFETY AND HEALTH AT HARVARD UNIVERSITY

The history of the Department of Industrial Hygiene at Harvard University corresponds with the principal period of innovation and discovery in the history of industrial health in the United States and includes many unique achievements as well as an extraordinarily large number of outstanding personalities. Indeed, much of the earliest literature on industrial hygiene, industrial toxicology, and occupational medicine in this country originated at Harvard.

Environmental health and, specifically, occupational health have been major concerns at Harvard since 1913, when the Harvard-Massachusetts Institute of Technology School of Health Officers was established by Professor William T. Sedgwick, Dr. Milton J. Rosenau, and Professor George C. Whipple. The curriculum included industrial hygiene and sanitation and covered the adverse effects of factory life on health, including occupational accidents, industrial poisonings, and the effects of ventilation and dusty trades on the widespread incidence of tuberculosis and other diseases.

In 1918 the name of the School was changed to the Harvard-Massachusetts Institute of Technology School of Public Health. Also in 1918, the Harvard Medical School organized a Division of Industrial Hygiene, largely through the efforts of Dr. Frederick C. Shattuck who secured from New England industrialists a fund of \$125,000, and began providing training in industrial hygiene in the School of Public Health for factory physicians throughout New England. After the entry of the United States into World War I in the spring of 1917, the number and variety of hazardous occupations had increased sharply in the United States, and the School was prepared to offer instruction in industrial hygiene and facilities to investigate the problems of industry.

Numerous requests regarding pressing problems were received from plant managers and Dr. Cecil K. Drinker organized a research facility. Cecil Drinker became a pioneer in industrial medicine and was among the first to emphasize the importance of the respiratory tract as the route of absorption for toxic dusts and fumes. He proved to be a strong advocate for the establishment of industrial hygiene and applied physiology as disciplines in preventive medicine. The first success of the modest research group in an extended series of investigations on dust and dust hazards was the investigation of an obscure condition of industrial poisoning on

behalf of the New Jersey Zinc Company, where manganese was proved responsible.

In 1919 Harvard University's first woman professor, Dr. Alice Hamilton, was named Assistant Professor of Industrial Medicine in the Division of Industrial Hygiene. In spite of prejudices, she achieved major accomplishments in a professional world dominated by men.

In 1921 Harvard received an endowment fund from The Rockefeller Foundation which stipulated that the joint Harvard-Massachusetts Institute of Technology School of Public Health be dissolved. The new School of Public Health at Harvard was opened in 1922, offering studies leading to bachelor, master, and doctor of public health degrees. Dr. Alice Hamilton administered an advanced course in industrial toxicology, and Dr. Philip Drinker, Cecil Drinker's brother, directed a new program in ventilation that applied engineering principles to measurement of air flow, psychometry, the use of the Katakthermometer, and the design of air conditioning in factories. Opportunities for studies in occupational medicine were offered at the Industrial Hygiene Clinic of the Massachusetts General Hospital, where Dr. Harriet Hardy later practiced occupational medicine.

In 1924 Drs. Cecil Drinker, Katherine Drinker, and William B. Castle were the first scientists to investigate radium poisoning thoroughly. Radium poisoning was suspected among workers painting dials of clocks and watches in Orange, New Jersey. The hazard resulted from painting brushes by placing them between the lips and from the atmosphere in the work-rooms. Through a succession of other radium-poison investigations, the findings of this group became the accepted authority.

The effects of temperature and humidity came under intensive study at Harvard beginning in 1925 when Mr. Constantin P. Yaglou joined the staff of the Department of Industrial Hygiene as Instructor. Mr. Yaglou collaborated with Dr. Kenneth Blackfan, Professor of Pediatrics at the Medical School and Physician-in-Chief at the Children's Hospital, to construct and operate an air-conditioned room for premature infants whose mortality was very high. Mr. Yaglou's studies resulted in the formulation of a temperature scheme applicable to premature babies that stabilized body temperature and greatly reduced mortality.

Beginning in 1926 Philip Drinker worked under the auspices of the Rockefeller Institute to develop better methods of resuscitation. He sought to improve the old-fashioned pulmotor for resuscitating victims of electric shock or illuminating gas poisoning, and was aided by Louis Shaw, a Harvard colleague, in the development of a respirator large enough to hold a human. The first patient to use it was from the Children's Hospital. The child was unconscious from respiratory paralysis, but recovered consciousness in less than a minute after the respirator was started. This was one of the most dramatic discoveries in the history of industrial hygiene, and the Drinker Respirator, or "iron lung", rapidly gained worldwide acceptance.

For many years Alice Hamilton taught industrial toxicology at Harvard and made significant contributions in research on the chronic effects of carbon monoxide poisoning in garages, printing establishments, tunnels, and mining in collaboration with Cecil Drinker, and on mercury poisoning in the felt-hat industry with Wade Wright, Philip Drinker, and others. She produced a significant number of papers on industrial lead and aniline poisoning.

Largely through her investigation of worker poisoning in the Illinois lead industry, that state became the first in the country to adopt legislation aimed at safeguarding workers' health. This was the first comprehensive survey of occupational disease conducted in the United States. Hamilton and Professor Philip Drinker struggled to gain management and labor support for measures aimed at combating lead poisoning as well as silicosis.

Alice Hamilton, pioneer in industrial toxicology and occupational medicine, wrote many papers that are classics in the field of industrial health. Her productivity continued beyond her retirement in 1935, and her influence in this field cannot be overestimated. Her opinion was constantly sought by many large organizations, and her decisions almost always resulted in decisive action by the application of proper protective measures.

Leslie Silverman came to the School in 1937 and was named Instructor in Industrial Hygiene in 1939 while he continued doctoral work. Charles R. Williams also came to the School in 1937 on a part-time basis with the title of Instructor in Industrial Hygiene. He was employed by the Liberty Mutual Insurance Company to conduct dust surveys for their insured risks and became an expert on the identification and analysis of airborne dust.

By 1939 the Department of Industrial Hygiene was staffed with a significant group of scientists and engineers including Philip Drinker, Constantin Yaglou, Leslie Silverman, and Charles Williams. War-oriented work during World War II included the development of oxygen equipment for high-altitude flight and its physiological evaluation; a protective gas mask to meet the needs of chemical warfare; heating, ventilation, and air-conditioning systems; and a national health-education program for shipyard workers.

In 1946 the School of Public Health became independent of the Medical School, and peace-time teaching and research were resumed. Increasing numbers of students sought to extend industrial hygiene knowledge into the newer specialties of radiological health and air-pollution control. Drinker, Silverman, and Williams began serving as consultants to the Atomic Energy Commission, and as a result radiation protection, aerosol physics, and air and gas-cleaning technology gained greater prominence in the teaching programs.

In 1949 Philip Drinker initiated a study to determine permissible concentrations of sulfuric acid vapor for humans and animals. Dr. Mary Amdur joined Drinker and Silverman in these studies and extended the research to other common acids. By the mid-1950's the Department of Industrial Hygiene had enlarged its curriculum and research efforts to include radiological safety and air-pollution control in addition to the more traditional studies of industrial hygiene, industrial medicine, industrial safety, and environmental sanitation.

The Departments of Industrial Hygiene, Physiology, and Sanitary Engineering were grouped under a single Division of Environmental Health and Engineering Sciences. In 1957 the Rockefeller Foundation funded a grant to the School of Public Health for a program in radiological hygiene. Leslie Silverman was responsible for the engineering aspects of this program and became the second Head of the Department of Industrial Hygiene when Philip Drinker retired in 1961.

New research laboratories were dedicated in 1962 and the Department of Industrial Hygiene was situated in new quarters with other departments in the Division of Environmental Health and Engineering Sciences, which had been placed under the direction of Dr. James L. Whittenberger. Later, the Division became a part of the new NIEHS-funded Kresge Center for Environmental Health at the School.

The launching of a new field of studies on solid-waste management in 1962 by Leslie Silverman and Melvin First continued the enlargement of the scope of concern related to environmental health problems in the Department of Industrial Hygiene.

Leslie Silverman became ill in 1966, and upon his death James L. Whittenberger was appointed Acting Head of the Department of Industrial Hygiene. Under the leadership of Drs. Whittenberger, Benjamin G. Ferris Jr., John M. Peters, David H. Wegman, and William A. Burgess, continuation of the historic interest in the relationship between occupational exposures and occupational disease was reflected by a series of more recent research efforts aimed at identifying new job-related hazards and bringing them under control. These included studies of toluene di-isocyanate (TDI) and lead toxicity; evaluations of health hazards involved in fire fighting and rubber-tire manufacture; respiratory disease in granite cutting, talc mining, and meat wrappers employed in the retail food industry; and mortality in a number of different types of manufacturing concerns in Massachusetts. Morbidity or mortality studies determined whether excess disease was seen when compared to less-exposed populations. Industrial hygiene evaluations characterized exposure to specific chemical substances and were used in the development of recommendations for controlling identified hazards.

Although interdisciplinary teamwork had long marked occupational health research at the School, it was not until 1971 that another important form of collaboration was achieved. The School played a signal role as a non-partisan participant in environmental research of vital concern to differing societal groups: industry, government, consumers, and workers. A pioneering agreement with the United Rubber Workers and the BF Goodrich Company paved the way for similar three-way agreements with labor and management at the School and elsewhere. After careful negotiation, the Company and the Union agreed to make Company resources available and the University agreed to conduct research on occupational health, industrial hygiene, and occupational epidemiology in the rubber-tire industry. Over a period of ten years, the School's researchers created a detailed picture of health effects in the industry and proposed changes adopted by a joint labor-management team.

There has been continued interest in such collaborative studies, since joint labor-management sponsorship of occupational health studies carries with it great potential both for achieving cooperation from all parties and for having control methods suggested by the research results implemented. The meat wrappers project, which began in 1976 and was concluded in 1983, was another investigation that successfully adopted the rubber industry model. In 1984 members of the faculty and staff began studying the health effects of machining fluids used in the automobile industry. This project arose from the joint initiatives of the General Motors Corporation and the United Automobile Workers' Union. The Corporation provided funding for this study as a result of GMUAW contract negotiations.

In 1983, Dr. Richard Monson, Professor of Epidemiology, took over as director of the ERC and recruited most of the current faculty. Since the late 1980's new research initiatives developed by ERC faculty have involved combining molecular biology with epidemiology in the investigation of exposure-related disorders. Large-scale investigations now underway include genetic susceptibility to lung cancer and non-malignant respiratory disease, biomarkers of exposure and response after exposure to particulates, fuel-oil ash, bioaerosols, hydrocarbons, and heavy metals, such as lead and arsenic. The study of the gene-environment interactions has been the focus of many of the large research projects. In addition, occupational reproductive studies of textile, petrochemical, and agricultural workers are being performed and incorporate state-of-the-art biologic markers. International occupational health studies have expanded greatly over the past nine years and the ERC faculty conducts collaborative research in Asia, Africa, and Latin America.

Other current research spans a wide variety of occupational health problems with the broad objective to identify and reduce or eliminate job-related health and safety hazards. These activities include developing and evaluating methods of exposure assessment, evaluating control systems, evaluating surveillance systems, developing and evaluating worker training, developing and evaluating programs that combine health promotion approaches with health protection, and examining health and economic outcomes associated with occupational illness and injury.

In 1996 Dr. David Christiani, Professor of Occupational Medicine and Epidemiology, assumed directorship of the ERC with Dr. Thomas Smith, Professor of Industrial Hygiene as Deputy Director. Under their leadership research has continued to expand in the areas they and their colleagues have developed through the 1990's: an emphasis on innovative multidisciplinary investigations aimed at defining exposure-related disorders and developing methods to control them.

Current investigations draw upon the expertise of epidemiologists, industrial hygienists, biostatisticians, toxicologists, cancer biologists, physiologists, engineers, chemists, physicists, and other occupational health specialists, as well as economists, sociologists, and behavioral scientists. The School of Public Health's role as a synthesizer of the efforts of scientists in many disciplines continues to be perhaps its greatest strength, for, as in its earliest years, its research and training programs in environmental and occupational health have lent breadth through the cross-disciplinary collaboration of many fields.

In 1977 the National Institute for Occupational Safety and Health (NIOSH) established regional centers of learning for occupational safety and health professionals within universities throughout the United States. The Centers were developed in response to the Occupational Safety and Health Act of 1970, which mandated that the Secretary of the Department of Health and Human Services ensure an adequate supply of trained professionals for this field. The Harvard School of Public Health was selected as the site of a NIOSH-sponsored Occupational Safety and Health Educational Resource Center (ERC) to serve the New England region. This award greatly enhanced the School's training capacity in this field and helped to strengthen the core of professionals conducting research as well. In 1997 the name of the center was changed to the Education and Research Center for Occupational Safety and

Health, reflecting the Center's dual mission of professional training and research.

The ERC at Harvard offers interdisciplinary graduate-degree programs in occupational medicine, occupational epidemiology, occupational health nursing, industrial hygiene, hazardous substances, ergonomics/ injury prevention, and in other disciplines that come into play to solve occupational health and safety problems. The nursing core is offered in collaboration with Simmons College, a neighboring institution in the Longwood Medical Area. The educational programs target the New England states, but attract candidates for training from all areas of the country as well as from foreign countries.

Indeed, Harvard University has always been a global leader in research and training for many disciplines and occupational health is one of them. Many of the leading occupational health scientists in the US and abroad, who direct training programs, research programs, government agencies, labor and corporate health and safety departments, are graduates of the Harvard ERC.

The objective of the Center is to train occupational safety and health professionals to recognize and prevent occupational injuries and disease, with prevention being the primary orientation. This objective is being accomplished by directing the training effort at the development of public-health perspectives, the acquisition of skills and knowledge for prevention, and the creation of sensitivity about the political and social climate in which professionals must act. Harvard ERC graduates are serving in many realms: academia, industry, all levels of government, hospitals, occupational health clinics, and labor unions.

In addition to the full-time degree programs, mid-career training is offered through short-term courses, seminars, and workshops for physicians, nurses, industrial hygienists, safety engineers, and other occupational safety and health professionals, paraprofessionals, and technicians. Lectures are presented by faculty, staff, and students of the Center, supplemented by external experts for coverage of special topics. Some of the courses are structured so that institutions of higher education, public health and safety agencies, professional societies, or other appropriate organizations can utilize the information to provide training at the local level to occupational health and safety personnel serving in the workplace. The Center often collaborates in offering such training with professional associations, educational institutions, and other organizations committed to providing training opportunities.

Another innovative aspect of the Center's activities is its Outreach Program. This program impacts the New England region through efforts to spark the development of occupational safety and health training programs or the incorporation of curriculum content at other institutions. The Visiting Scholars Program serves as the vehicle for achieving this objective. A secondary goal is to create awareness of occupational safety and health in professional and non-professional communities. The regional networking system that has been developed by this program has been fostered through interaction with colleges and universities, agencies, professional societies, public health departments, occupational health clinics, unions, management, community associations, and other entities.

Faculty, staff, and students all play a role in outreach and public service activities ranging from serving on committees and providing private consultation to presenting papers or seminars, offering curriculum assistance, screening groups of workers for health effects due to workplace exposures, and recruitment of potential students.



# The Harvard

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## SKETCHES

### ANN BACKUS

Ann Backus, MS, is Director of Outreach for the Harvard ERC, and the HSPH-NIEHS Center Grant. Her responsibilities include the Visiting Scholars Program, and the development of other programs that improve the access of the public, policy-makers, academicians, and practicing professionals to concepts and current research findings in occupational and environmental health.

She is interested in management issues related to occupational safety and health and the resolution of workplace concerns through competent management of human resources. Her current work includes membership of the Maine Commercial Fishing Safety Advisory Council, and work with the Marine Safety Office of the US Coast Guard to reduce injury and death of fishermen. Her column *FISH SAFE* appears bi-monthly in Commercial Fisheries News, alternating with a column, *The Voice of Safety*, in Fisherman's Voice.

In the field of environmental health, Ms. Backus promotes environmental education for academic and public health nurses. See [www.ehnursing.org](http://www.ehnursing.org)

Ms. Backus is the administrator for the Occupational and Environmental Medicine Residency Program.

### DAVID C. CHRISTIANI

Dr. Christiani became Director of the Occupational Health Program in July 1996. His major research interest is in occupational epidemiology, particularly in developing new methods and applications of physiological and biologic markers in population studies. He has been involved in epidemiologic studies of working populations in the US and abroad. For example, with colleagues in Shanghai, China, he has been conducting a longitudinal study of respiratory disease in cotton textile workers for the past 30 years. Study objectives have included determining the rate of loss in lung function among cotton dust- and endotoxin-exposed workers, using silk workers as controls. Objectives have also included evaluating symptoms in chronic lung function loss as well as the relationship between acute changes in lung function and chronic lung function loss and exposure-response relationship to gram-negative bacterial endotoxin and cotton dust exposure. Other major projects have included the development of a multi-disciplinary approach for the molecular and genetic analysis of lung and esophageal cancer in collaboration with other researchers in the ERC and the Massachusetts General

Hospital. He is also leading studies using biologic markers of airway inflammations, lung injury and carcinogenesis. Other areas of work have included investigating cardiac effects of occupational particulate exposure; investigation of respiratory, skin, renal, and neuropsychological abnormalities among solvent-exposed printing pressmen; respiratory disease in workers exposed to machining fluids, with particular attention to occupational asthma; occupational asthma among health-care workers; molecular epidemiology of acute lung injury; and development of biological markers for use in assessing occupational and environmental diseases.

He has conducted occupational health research on four continents and has developed a wide network of collaborators. He has a particular interest in collaborative occupational health research in developing countries and has adapted state-of-the-art research techniques for use in settings of industrializing countries in East Asia, Africa, and Central America. Current international projects include, in addition to the study of respiratory disease in cotton textile workers in China, reproductive effects of exposure to petrochemicals and agricultural chemicals in China; respiratory effects of herbicide and pesticide exposure in Southern Africa; a study of arsenic exposure and bladder and cancer in Taiwan, and Bangladesh; a study of brain neoplasms and leukemia in children in Taiwan; and cardiac and respiratory effects of particulate exposure in both occupational and community populations.

In addition to his research and teaching at Harvard, Dr. Christiani directs two occupational medicine clinics which are affiliated with the ERC and provide valuable practicum site experiences for ERC trainees: The Occupational Medicine Section at the Massachusetts General Hospital. In addition, Dr. Christiani directs the Occupational Epidemiology academic core.

Dr. Christiani has published over 400 articles in the medical literature and serves on several federal advisory committees and journal editorial boards.

### JACK T. DENNERLEIN

Dr. Dennerlein's research aims to prevent work-related musculoskeletal disorders (MSDs) through understanding the injury mechanisms based on hypothesis-driven studies examining biomechanics, neuromuscular, and exposure-response models. Work-related MSDs are a large public health burden in the United States and other industrialized economies. In the U.S. alone conservative estimates put the direct and indirect cost of work-related MSDs at about \$50 billion per year. Unfortunately, research on work-related musculoskeletal disorders is lagging mainly due to the methodological challenges associated with exposure assessment and outcome classifications. In addition, we lack understanding of the specific pathology and etiology associated with these disorders. As a result there are many gaps in building exposure - dose response relationships. We are filling these gaps through incorporating laboratory based biomechanical concepts with field exposure assessment methods, a unique, innovative, and needed approach to preventing work-related musculoskeletal disorders.

Dr Dennerlein's research group encompasses four areas: exposure assessment, neuromuscular biomechanics, workstation and tool design, and injury epidemiology. Their exposure assessment research is based upon biomechanical and injury mechanism principals and utilizes direct

measurement techniques to determine mechanical and physiological exposures during computer usage. They have observed exposure-response relationships between daily computer usage and daily MSD symptoms (Chang et al., 2007) as well as between repetitive wrist and finger activities and physiological responses as measured by muscle fatigue (Dennerlein et al., 2003; Lehman et al. 2006). Based upon pioneering in vivo human tendon force measurements, they have initiated new biomechanics research to determine the functional role of joints, muscles, and tendons of the upper extremity that are susceptible to injury during repetitive tasks. Their approach integrates energy transfer concepts to identify potential injury pathways for the musculoskeletal system (e.g. Dennerlein et al., 2007). They study the impact of input devices and workstation designs on the biomechanics of the upper extremity. Through this lens they have evaluated the effectiveness of many interventions, such as changes in key switch design (Jindrich et al., 2004; Balkrishnan et al., 2006; Lee et al., 2009), mouse design (Oude Hengel et al., 2008) and work-station design and setup (e.g. Dennerlein and Johnson, 2006). Their findings have influenced the design of devices available on the market today. Recently they have initiated an intervention study testing the hypothesis that combining ergonomic interventions and work-place health promotion programs will improve musculoskeletal health of health care workers. In addition, we have observed relationships with traffic situations and bicycle injuries as well as developed observational tools to quantify compliance to best practices of ladder use in construction. Overall their research is breaking new ground on examining the various aspects of exposure-outcome relationships and interventions in order to prevent work-related MSDs and injury.

## **DOUGLAS W. DOCKERY**

Dr. Dockery is chair of the Department of Environmental Health. He and his colleagues recently reported that particulate air pollution at concentrations below the current EPA standards is associated with increased mortality. This report is based on twenty years of follow-up of adults and children in a study of the health effects of exposures to air pollution from fossil fuel combustion. Other analyses by these investigators have shown that episodes of particulate pollution are associated with increased daily mortality in cities in the United States, Eastern Europe, China, and South America.

Dr. Dockery is currently directing a study of the effects of urban air pollution on inner city children. This study includes an evaluation of lung function and respiratory illness prevalence, a panel study of daily respiratory symptom reports and lung function measurements, and an analysis of emergency department visits for respiratory illnesses in five cities (Philadelphia, Washington, Nashville, Atlanta, and Cleveland). Similar exposure and health data for children is being collected in Mexico, Brazil, China, and twelve centers in western and Eastern Europe which will be compared to the US data.

Dr. Dockery's research interests also include the influence of indoor pollution exposures on development of lung disease in children. Specific exposures include environmental tobacco smoke, un-vented cook stoves (including gas stoves in the United States and coal stoves in China), and aero-allergens (including dust mites, molds, and mildews).

## **SUSAN M. DUTY**

Dr. Duty is an assistant professor in the department of nursing at Simmons College. She lectures in both the undergraduate nursing program and in the graduate program in occupational health nursing and research. She is certified as an Adult Nurse Practitioner and has worked in occupational health and emergency department urgent-care clinics. In addition to her teaching responsibilities at Simmons, Susan works as a Nurse Research Scientist at South Shore Hospital and collaborates with Dr. Hauser (HSPH) on a large cross-sectional study to explore the relationship between environmental exposures to phthalates and male reproductive outcomes. Her specific research interest is focused on phthalates (plasticizers that soften plastics or hold color and scent in personal care products). She received federal funding for 2 pilot studies: an occupational study characterizing phthalate exposure among manicurists and a collaboration with researchers in the Netherlands exploring environmental determinants of children's growth and development. She has been invited to present her research nationally and internationally.

## **JOHN S. EVANS**

Dr. Evans' research focuses on risk assessment. Areas of interest include analysis of uncertainty in exposure and risk assessment, and estimation of the value of information.

Recently completed projects include (1) a study using expert judgment to explore the uncertainty in estimates of the carcinogenic potency of chloroform, (2) an assessment of the exposure of workers in the fiberglass industry to endotoxins and formaldehyde, and (3) an evaluation of un-certainty in the pharmacokinetics of chloroform.

Ongoing work includes (1) an investigation of the potential value of the information generated by the EPA's proposed National Human Exposure Assessment Survey and (2) development of approaches for assessment of risks in data sparse environments.

Dr. Evans is director of the IPH Program in Environmental Health and Public Policy. He is a member of AAAS and the SRA. Dr. Evans has served as a member and chair-man of the AWMA Committee on Risk Assessment, was a member of the AIHA Committee on Exposure Assessment Strategies, was president of the New England Chapter of the SRA, and serves on the editorial boards of Risk Analysis and Occupational and Environmental Medicine.

## **JESSICA GOMAN**

Jessica Goman is Director of Continuing Education for the ERC. She is responsible for ERC continuing education programs and for the financial management of the Center.

## **ROSE H. GOLDMAN**

Dr. Goldman is Chief of Occupational and Environmental Medicine for the Cambridge Health Alliance. Her academic appointments are as Associate Professor of Medicine at Harvard Medical School, and Associate Professor of Environmental Sciences at Harvard School of Public Health. Dr. Goldman's research has centered on clinical epidemiological questions, particularly involving neurotoxicity,



repetitive strain injuries, metals, and pediatric environmental health. Her most recent research project has been a randomized clinical trial of treatment (amitriptyline and acupuncture) for arm symptoms arising from repetitive use. She also serves as co-director of the Pediatric Environmental Health Specialty Unit, a collaboration between Cambridge Hospital and Children's Hospital. Dr. Goldman is an occupational/environmental medicine consultant to the Massachusetts/Rhode Island Poison Control Center, to the Massachusetts Adult Lead Registry and to the Massachusetts Department of Public Health. She is an ardent educator, and has also been involved in projects and research involving teaching occupational and environmental health.

## **PHILIPPE GRANDJEAN**

Dr. Grandjean is an Adjunct Professor, who brings who brings international experience with emphasis on life-course epidemiology. His studies of birth cohorts in the Faroe Islands focus on mercury, PCB, and endocrine disruptors and their effects on development, neurobehavior, cardiovascular, and immune function. The results have led to decreased exposure limits for mercury in many countries. His research in occupational health has dealt with carcinogens, metals, and the importance of cutaneous exposures. Dr. Grandjean has authored handbooks on 'Skin Penetration' and 'Clinical Effects of Environmental Chemicals'. His interest in biomarker development recently led to validation of a new serum marker of estrogenic activity. Among current activities, he heads a scientific committee on the precautionary principle that focuses on implications for research and prevention.

Dr. Grandjean is also Professor and Chair of the Department of Environmental Medicine at the University of Southern Denmark, Odense, Denmark. He serves on editorial boards of several scientific journals and is founding editor of the web-based journal Environmental Health. As part of his international work, he has served on or chaired several committees under the auspices of the EC, IARC, IPCS, UNEP, WHO, and other organizations.

## **RUSS B. HAUSER**

Dr. Hauser's research interest is in the field of reproductive epidemiology. He is currently conducting several studies on the relationship of environmental and occupational chemicals with fertility and pregnancy outcomes. The studies are being conducted in collaboration with researchers at Massachusetts General Hospital and Brigham and Women's Hospital. His specific interests are to determine if organochlorines, pesticides, bisphenol A, and phthalates adversely affect fertility and pregnancy through altered endocrine signaling.

He is also conducting a longitudinal study on the relationship between dioxins and sexual maturation and physical growth among adolescent males in Chapaevsk, Russia. Individuals in Chapaevsk are exposed to high levels of dioxins as a result of environmental contamination from a large complex of chemical plants in the city. The study is being conducted in collaboration with Russian investigators from the Chapaevsk Medical Association and scientists from the Russian Academy of Sciences, Moscow.

Dr. Hauser teaches the Foundations in Public Health course (ID 538) and is director of the ERC Pilot Projects Research Training Program. He is also director of the Organic Pollutants

research core in the HSPH NIEHS Center for Environmental Health.

## **ROBERT F. HERRICK**

Dr. Herrick's research interests are centered on the assessment of exposure as a cause of occupational and environmental disease. Within this area, he has investigated the development of methods for measuring the biologically active characteristics of epoxy paint aerosols. He has also conducted studies of work processes in the construction and foundry industries to develop task-based models to identify and control the primary sources of worker exposures. In his work on exposure assessment in epidemiologic studies, Dr. Herrick has investigated the reconstruction of historical exposures to formaldehyde, ethylene oxide, benzene, and acrylonitrile.

Dr. Herrick is also active in international health, specifically in the development and practice of occupational hygiene. He is past-president of the International Occupational Hygiene Association, and he is active in the Association's mentor program, which facilitates training for occupational health practitioners in industrializing countries.

## **STEFANOS N. KALES**

Dr. Kales became the Director of the Occupational & Environmental Medicine Residency in July 2006. He is an Associate Professor of Medicine at Harvard Medical School; Associate Professor of Occupational Medicine at the Harvard School of Public Health; and the Medical Director of Employee Health & Industrial Medicine at the Cambridge Health Alliance.

He is Board Certified in Internal Medicine and Preventive Medicine: Occupational Medicine, and has been elected to Fellowship by both the American College of Physicians and by the American College of Occupational & Environmental Medicine. Dr. Kales has participated in a wide range of research, advisory and teaching activities on three continents. His primary research has focused on firefighters. Further studies have sought to identify risk factors for adverse health and employment outcomes, and heart disease in particular. His group's work is influencing medical standards for firefighter's fitness for duty, the need for improved wellness programs and methods for determining the causal relationship of heart disease among firefighters to their job activities and other factors. Dr. Kales' research on firefighters has received Massachusetts, Federal and Canadian funding.

Other collaborations focus on cardiovascular and metabolic risk factors and their evolution over time, including a new cohort study of young adults in Cyprus funded by the Research Promotion Foundation of Cyprus. Additional research areas have included carbon monoxide exposure, chemical terrorism and chemical emergencies and heavy metals. One particular area, related to lead exposure from traditional Indian medications has had wide impact, triggering changes in the regulation of these medications by the Indian and Canadian governments and spurring various American health departments to scrutinize the sale of these folk remedies.

Dr. Kales is on the editorial boards of Environmental Health Perspectives and the Archives of Environmental and Occupational Health. He is an occupational medicine consultant to the Massachusetts/Rhode Island Poison Control Center, served for several years as the medical consultant to

Massachusetts' Adult Lead Registry, and worked with the state's regional hazardous materials teams for 10 years.

## **JEFFREY N. KATZ**

Dr. Katz is a Director of Health Services Research at the Robert Brigham Multipurpose Arthritis and Musculoskeletal Diseases Center at Brigham and Women's Hospital. His primary appointment is as Associate Professor of Medicine, HMS. His work has focused on optimizing clinical and occupational outcomes of work associated upper extremity problems. He also has major focus of work on optimizing outcomes of elective orthopedic surgery in the Medicare population. He has studied cohorts of workers with carpal tunnel syndrome in diverse occupational groups throughout Maine, and large population based cohorts of patients undergoing total hip replacement in the Medicare population. He has employed a range of methodological approaches in his work including qualitative research, basic development of outcome assessment scales, epidemiology, psychometrics, administrative data analysis and cost effectiveness analysis.

## **SUSAN KORRICK**

Dr. Korrick's research focus is on children's environmental health. Specifically, she studies the developmental, cognitive, and behavioral toxicities of common environmental contaminants including metals (lead, mercury, manganese, arsenic), organochlorine pesticides, and polychlorinated biphenyls (PCBs). Recently, her research program has expanded to include studies of prototypical endocrine disruptors (phthalates and bisphenol A or BPA) that have been the focus of current public concern. Her ongoing studies of longitudinal birth cohort in southeastern Massachusetts span the children's development from birth through adolescence. This work is focused on the relation of early life exposures to metals and organochlorines with subsequent childhood growth, cognition, school achievement, and behavior. Results of this work have contributed new insights into understanding potential environmental risk factors for common behavioral disorders of childhood. For example, studies in this population have identified prenatal PCB exposure as a risk factor for Attention Deficit Hyperactivity Disorder (ADHA) symptoms among school age children. In related work spanning the life cycle, Dr. Korrick's research includes studies of environmental contaminants and women's reproductive health as well as studies of cognitive function among aging women, the latter done in collaboration with the Nurses' Health Study. In addition to her research program, Dr. Korrick is an occupational medicine consultant to Brigham and Women's Hospital (BWH) Employee Health Service and has a clinical practice in Occupational and Environmental Medicine as part of the Department of Medicine, BWH.

## **PETROS KOUTRAKIS**

Dr. Koutrakis designs and develops personal samplers that measure human exposures to acidic aerosols and gases. His samplers and methodology have been utilized in national and international epidemiologic studies. He has also pioneered a new passive sampler which assesses human exposures to ozone.

Dr. Koutrakis recently became the technical editor-in-chief for the Journal of the Air & Waste Management Association, the

oldest and largest international publication in this field. He continues to investigate the physical and chemical processes affecting the formation, transport, and fate of indoor air contaminants. His two largest current projects, both funded by the US EPA, involve the investigation of acid aerosol exposures in metropolitan settings and the development of sampling methods for exposure assessment of inorganic air pollutants. He is particularly interested in assessing the relative contributions of indoor and outdoor sources as well as investigating chemical reactions occurring on indoor surfaces. Dr. Koutrakis applies multivariate analysis techniques such as factor, cluster, and correspondence analysis to identify and apportion sources of air pollutants, developing methods that are very important for emission control strategies.

## **CAROLYN S. LANGER**

A physician and lawyer, Dr. Langer has worked on a wide range of issues at the interface of occupational medicine and law. She is particularly interested in examining the impact of issues, such as confidentiality, tort liability, and employment discrimination, on the provision of occupational health services. She has also done research on women's occupational health and fetal protection policies. Recently completed projects include writings on occupational health law, the Americans with Disabilities Act, and women's occupational health. Dr. Langer is currently the Vice President and Program Chairperson of the New England College of Occupational and Environmental Medicine. She is also a lieutenant colonel and flight surgeon in the Army National Guard. She is Medical Director at Managed Comp.

## **JONATHAN LEVY**

Dr. Levy is interested in the health impacts of power plants and transportation; air pollution exposure assessment and risk assessment; environmental equity; indoor air quality; community-based research.

## **CHENSHENG (ALEX) LU**

Dr. Lu's research interest is to utilize biomarker for linking chemical exposures to adverse health outcomes. His primary research interest is in the area of environmental exposure biology focusing on pesticide exposure and health risk assessments. His research program integrates novel biomarkers of exposure and effect, physiologically-based pharmacokinetic (PBPK) model and cumulative risk assessment models. His current research projects include; 1) exploring the feasibility of assessing pesticide exposure using salivary biomarker, 2) assessing population-based longitudinal pesticide exposures in corresponding to the variation of dietary consumption patterns, and 3) reconstructing absorbed pesticide dose in children and farm worker population using PBPK/ERDEM model. He currently serves as an ad hoc member on the US EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel, and the associate editor for Environmental Health Perspectives (EHP) and the Journal of Exposure Science and Environmental Epidemiology (JESEE).

## **JAMES McDEVITT**

Much of Dr. McDevitt's research activity to date has centered on developing novel methods for the assessment of microbial

aerosols using molecular and microbiology techniques. Recognizing a need for improved estimates of bioaerosol inhalation exposure within a conventional industrial hygiene context, he utilized quantitative PCR measurement of microbial nucleic acid and cell culture methods to measure viruses in conjunction with traditional air sampling methods to devise a means of reliably determining airborne concentrations of infectious bioaerosols. He has used these aerosol-measuring techniques to study inactivation of aerosolized viruses through the use of heat, ultraviolet germicidal irradiation, and chemical methods under varying environmental conditions.

Dr. McDevitt's current research is focused on using exhaled breath particles as biomarkers of infectious and inflammatory pulmonary disease. Currently he is studying airborne transmission of respiratory viruses. Source characterization of exhaled breath particle number and size will be critical for understanding the spread of airborne infection as well as for determining appropriate interventions. The collection of exhaled breath particles can also be used for noninvasive collection of epithelial lining fluids (ELF) and enables the analysis of a wide variety of biomarkers of pulmonary disease. Dr. McDevitt's research is focusing on optimizing breathing maneuvers, air samplers, and molecular analysis techniques to increase sensitivity and allow meaningful study of exhaled breath proteins as biomarkers of exposure.

## **PATRICIA McGAFFIGAN**

Patricia McGaffigan is the Associate Director for Administration and Finance in the Environmental and Occupational Medicine and Epidemiology Program and the Administrator of the Harvard ERC. Her office is responsible for the administration and management of program resources, including finances, grants, personnel, IT, operations, faculty affairs, and planning. She oversees grants management and compliance for the program's research portfolio of close to \$15 million in federal and nonfederal funding. She has over 25 years of research, project, and administrative management experience.

## **EILEEN McNEELY**

Dr. McNeely became interested in the health effects of work and the environment while treating patients in Appalachia, noting the central role of work in the individual's life. Her area of study includes the broader political, economic and social arrangements that affect work, productivity, health, and the quality of life.

She is interested in health care policy, workers' compensation, organizational behavior and psychology, in addition to, the traditional focus of physical exposures in the environment.

Her current research incorporates this multi-dimensional view of health and the environment in the study of health care workers and airline workers. The impact of environmental exposures for patients and passengers is considered a further issue for public health as well.

Dr. McNeely teaches the core course in Work, Health and Productivity (EH523- formerly EH281).

## **RICHARD R. MONSON**

Dr. Monson served as Director of the Occupational Health Program from 1983 to 1996. He has a general interest in the

relationship between the environment and disease. With respect to the working environment, he has conducted long-term follow-up studies of BF Goodrich rubber workers and of General Motor's automobile workers in order to assess the relationship between work and the development of cancer. As part of this study he developed the USDR computer program, which has general utility in the analysis of data from follow-up studies. This program has been used primarily in the analysis of data from retrospective cohort studies of occupational groups.

Dr. Monson's book, Occupational Epidemiology, was published in 1980. In this work he reviews the basics of epidemiologic methods and discusses how they relate to the evaluation of occupational health problems. A second edition was published in 1990.

From 1992 – 2004 Dr. Monson directed the Superfund Basic Research Program. From 1998 - 2006 he served as the Associate Dean for Professional Education and the Director of the MPH program. Currently, he is Professor of Epidemiology, Emeritus.

## **MELISSA J. PERRY**

Dr. Perry is an occupational epidemiologist with research interests in the health effects of pesticide exposures and the prevention of chemical and physical hazards in high risk industries. Her lab is conducting studies of chromosomal aberrations in germ cells as biomarkers of pesticide health effects. She is collaborating on pesticide studies in South Africa, Tanzania, China, and New Zealand. She co-teaches ID538 Foundations in Public Health offered in the fall semester, and EH282 Injury Epidemiology, offered in the spring semester. She is Co-Director of the Occupational Injury Prevention Research Training Program and Director of MPH Concentration in Occupational and Environmental Health. She advises students concentrating in occupational and injury epidemiology.

## **STEPHEN N. RUDNICK**

Dr. Rudnick's primary research interests are in the field of environmental control, particularly the engineering control of air contaminants in indoor and occupational settings. His current research includes the optimization of air filters for the removal of airborne particles in indoor environments and the use of upper-room ultraviolet germicidal irradiation for the control of airborne microorganisms.

## **THOMAS J. SMITH**

Dr. Smith is the ERC Deputy Director. His primary research interest is characterization of environmental exposures for studies of health effects. The objective of this research is to determine: who is at risk from exposure? And: how much risk per unit of exposure? These studies have been used as the basis for occupational risk assessment and setting exposure standards. He has developed a new approach for designing exposure evaluations for epidemiologic studies of health effects. This approach examines the study design implications of mechanistic hypotheses about how toxic materials cause health effects. This approach has been used in several analyses: fibrogenic pulmonary effects of exposure to silicon carbide dust; ozone and acute respiratory effects; ethylene

oxide and DNA damage in sperm; and gasoline hydrocarbon vapors and cancer risk. He is currently using this approach in a large cohort study of lung cancer mortality in workers in the US trucking industry, and in a study of male reproductive risks for a cohort of Taiwanese petroleum workers in Taiwan, who are exposed to dimethyl-formaldehyde.

Recently Dr. Smith's research has been expanded to investigate the relationship between external exposure and internal dose in the evaluation of biomarkers for molecular epidemiology. Biomarkers are biological materials that may be used as indices of exposure such as hemoglobin adducts, or markers of potential effects such as development of micronuclei in lymphocytes. He has been studying 1,3-butadiene metabolism and its genetic determinants in order to assess its toxicokinetic behavior and ultimately project human risk. This has been followed by a study of biomarkers of occupational exposures among Taiwanese petrochemical workers in collaboration with Drs. Ho-Yuan Chang and Yue-Liang Guo at National Cheng Kung University, Medical College.

## JOHN D. SPENGLER

Dr. Spengler has conducted research in the areas of personal monitoring for particles, acid aerosols, metals, nitrogen dioxide, carbon monoxide, and volatile organic compounds among other pollutants. His experience includes air pollution meteorology, indoor air pollution, and their health effects. Current interests are the global health implications related to energy, housing, small industries, and the application of comparative risk analysis and pollution prevention.

## JAMES H. STEWART

Dr. Stewart received his PhD in Environmental Health/Toxicology (minor in Epidemiology) from the University of Massachusetts at Amherst in 1992. He also holds a Master's degree in Chemistry and a Bachelor's degree in Public Health. He has served as a Plant, Division and Corporate Director/Manager of Environmental Health and Safety for several large multinational organizations/ companies as well as a Compliance Officer with US OSHA.

Dr. Stewart is certified in Comprehensive Practice of Industrial Hygiene by ABIH and has 26 years experience as an active member of the environmental health and safety profession. He is the author of numerous professional articles and several books in the area of industrial hygiene, safety, risk assessment of carcinogens, mathematical modeling and management of environmental health and safety programs. Dr. Stewart has served on two National Academy of Science Committees as an industrial hygiene and safety expert. The first was the National Academy of Sciences' National Research Council Committee on *Prudent Practices in the Chemical Laboratory* (Regulatory Affairs Committee). The final report was published in 1995. The second was the National Academy of Sciences' National Research Council Committee on *Health and Safety of Research Animal Care Workers*. The final report was published in 1997. He is also an author in *Patty's Industrial Hygiene and Toxicology* and *The Occupational Environment: Its Evaluation and Control*.

Dr. Stewart is an Instructor and Research Associate at the Harvard University School of Public Health's Industrial Hygiene Program where he teaches graduate courses in industrial hygiene, EH&S Management and directs advanced

professional courses in environmental health and safety. His research includes exposure assessment, mathematical modeling of exposures and working with censored data. Dr. Stewart is also Director of Health and Safety Services at Environmental Health and Engineering, Inc. (EH&E), a large consulting firm in Newton, Massachusetts.

## HELEN H. SUH

Dr. Suh is interested in the characterization of personal and population exposures to air pollutants, including particles, acid aerosols, and gases; investigation of association between air pollutant exposures and cardiovascular health; assessment of exposure error, exposure effect modification, and potential for confounding in air pollution epidemiology.

## GREGORY R. WAGNER

Dr. Wagner is an Adjunct Professor, Harvard School of Public Health, and Senior Advisor to the Director of the U.S. National Institute for Occupational Safety and Health (NIOSH). Until recently, he served as Director of the NIOSH Division of Respiratory Disease Studies. He currently serves as national Chair of the NIOSH WorkLife Initiative, exploring the benefits of integrating traditional workplace health protection programs with efforts at health promotion. Dr. Wagner works closely with the World Health Organization (WHO) and International Labour Organization (ILO) in international efforts to combat occupational lung disease. He has represented the U.S. on a variety of expert committees of the WHO and ILO, including those responsible for updating the ILO listing of occupational diseases, recommending approaches to medical screening and surveillance of workers, and revising the system for classifying radiographs for pneumoconiosis. Dr. Wagner has also served on American Thoracic Society committees developing policy statements on silicosis, on the adverse health effects of air pollution, and on the diagnosis of non-malignant disease from asbestos exposure; and on federal advisory committees for the Departments of Energy and Justice on issues related to beryllium disease prevention and compensation for uranium miners. A graduate of Harvard College and Albert Einstein College of Medicine, Dr. Wagner has both taught and practiced internal and occupational medicine, and is board certified in both fields. His current professional work focuses on optimizing the health of people who work and the role of government in the prevention of disease.

## DAVID H. WEGMAN

Dr. Wegman served on the faculty of the Harvard School of Public Health from 1972-83 and was director of the Occupational Health Program from 1980-83. He then served as Chair of Occupational and Environmental Health at UCLA's School of Public Health until 1987, when he became the founding chair of the Department of Work Environment at the University of Massachusetts in Lowell, now one of the leading academic centers of research and training in New England.

Dr. Wegman has focused his research on epidemiologic studies of occupational respiratory disease, musculo-skeletal disorders, and cancer. He carried out some of the early work showing low-level effects of isocyanates on non-asthmatics, and has collaborated with Dr. Christiani in the study of cotton textile workers in China. In related work he is exploring issues of variability in peak expiratory flow measurements in normal



populations. Another major interest has been the developing methods to study subjective outcomes such as respiratory or irritant symptoms reports. He is also directing a major research activity exploring health and safety risks among construction workers involved in the building of the Third Harbor Tunnel and the underground Central Artery in Boston.

His professional activities include member of the Executive Board of the International Commission on Occupational Health (ICOH) and of the Executive Committee of ICOH's Scientific Committee on Epidemiology in Occupational Health; member of the Institute of Medicine (IOM) Committees to Review the "Health Consequences of Service During the Persian Gulf War" and to review federal research efforts on "Gender Differences in Susceptibility to Environmental Factors"; chair of the IOM Committee to study the Health and Safety Implications of Child Labor; member of the Department of Labor's Standards Advisory Committee on Metal Working Fluids; and Chair of an Mine Safety and Health Administration (MSHA) task force to explore dust standards and approaches to dust control in coal mines. He also serves as Chair of the Epidemiology Review Board for DuPont Corporation, and previously served on the NIOSH Board of Scientific Counselors and the EPA Scientific Advisory Board.

Dr. Wegman has published over 100 articles in the medical literature. In addition to articles addressing the research interests noted, he has also published on public health and policy issues concerning such issues as hazard and health surveillance, methods of exposure assessment for epidemiologic studies, the development of alternatives to regulation and the use of participatory methods to study occupational health risks. He is co-editor with Dr. Barry Levy of one of the standard textbooks in the field of occupational health, Occupational Health: Recognition and Prevention of Work-Related Disease, the fourth edition of which was published in 2004.

## MARC WEISSKOPF

Dr. Weisskopf's primary research interests, stemming from his background in neurobiology, include neurological disorders and how environmental factors affect the nervous system. Currently, he is working on projects to study the association between serum organochlorine pesticides collected prospectively and risk of Parkinson's disease (PD) in a Finnish cohort; lead and PD in a Boston based case-control study; environmental risk factors for Autism in the Nurses Health Study II cohort; and neurological effects of traumatic brain injury among bicycle messengers. Dr. Weisskopf also studies elderly men in the Normative Aging Study here in Boston to see how exposure to lead affects cognitive function, and how this may be modified by genetic polymorphisms. Recent work related to this project involved using the brain imaging technique of Magnetic Resonance Spectroscopy (MRS) to examine effects of lead on neuronal density and glial cell activation.

An important direction of Dr. Weisskopf's research involves exploring new ways of examining environmental and occupational impacts on the nervous system, such as MRS and simple brain reflexes that can be monitored physiologically. The goal of this work is to develop new biomarkers of effects on the nervous system in humans that may be earlier indicators- and potentially more sensitive ones- of adverse effects, as well as to improve our understanding of the mechanisms underlying toxicant effects on the nervous system.

## ROBERT WRIGHT

Dr. Wright trained in Pediatrics, Pediatric Emergency Medicine, Medical Toxicology, Environmental Health and Genetic Epidemiology. He is an Associate Professor of Pediatrics and Environmental Health and an attending in the Children's Hospital, Boston Emergency Department and the Pediatric Environmental Subspecialty Unit. He is director of the HSPH NIEHS Center Metals Research Core and the Co-Director of the Harvard-Michigan/Michigan-Harvard Metals Epidemiology Research Group with Dr. Howard Hu. He is also associate director of the Interdisciplinary Neurotoxicology Post-Doctoral Research Training program with Dr. David Bellinger. Dr. Wright is the Principal Investigator of the MATCH project, which is Project 1, in the HSPH Center for Children's Environmental Health, a birth cohort examining the neurotoxicity of Mining waste (Mn, Pb and Cd) in children living proximal to the Tar Creek Superfund Site. He is also the PI of a new study in Mexico City on Metal Mixtures and Neurodevelopment in collaboration with the National Institute of Public Health, Mexico. His research focus is on modifiers of neurotoxic chemicals, primarily social and genetic risk factors which alter the neurotoxicity of metals.

## ROSALIND WRIGHT

Rosalind J. Wright, MD, MPH, Assistant Professor in Medicine at Harvard Medical School, is a chronic disease epidemiologist with a primary interest in early life (prenatal and early childhood) predictors of childhood developmental diseases including asthma and neurobehavioral development as well as obesity. A particular focus is on the implementation of studies of environmental psychosocial stress and other socioeconomic risk factors for health disparities among women and children. Dr. Wright is the PI and Director of the Asthma Coalition on Community, Environmental, and Social Stress (ACCESS) project, an urban Boston cohort of 1000 women enrolled during pregnancy. This work considers specific traumatic stressors (e.g., intimate violence, community violence) as well as other social stressors. This research program explores a number of potential underlying mechanisms by incorporating biomarkers of physiological pathways through which stress may influence health in epidemiologic study designs (e.g., hypothalamic-pituitary-adrenal axis, maturation of the immune system, and psychophysiological in-laboratory assessments, genetics and epigenetics). We consider environmental interactions (e.g., stress, air pollution, indoor aeroallergens, and tobacco smoke) as well as gene x environment interactions.



# The Harvard

EDUCATION AND RESEARCH CENTER

## CALENDAR

### FALL SEMESTER 2010

#### AUGUST/SEPTEMBER

- 16 Deadline to submit intent to register form for TAP/Affiliates and Non-Harvard Cross Registration for fall semester and Fall 1 term courses
- 25 Check-in new students (8:30-2:30)
- 25-31 Orientation Programs
- 01 Fall Semester and Fall 1 term courses begin
- 03 Deadline for students to update address information on OASIS in ALICE.
- 06 Labor Day – a holiday
- 10 Add/Drop/Change Deadline: Fall Semester and Fall 1 Term courses for all degree and non-degree students.  
Final Signed Registration Printouts Due (5:00pm)
- 24 Withdrawal Deadline: Fall 1 Term Courses (5:00pm)\*

#### OCTOBER

- 11 Columbus Day – a holiday
- 12 Deadline to submit intent to register form for TAP/Affiliates and non-Harvard Cross Registrant and for Fall 2 Term Courses (4:00pm)
- 22 Fall 1 Term courses end
- 25 Fall 2 Term courses begin
- 29 GRADES DUE: Fall 1 Term courses

#### NOVEMBER

- TBA November Degree Voting Date
- 05 Add/Drop/Change Deadline: Fall 2 Term Courses for all degree and non-degree students

- Final Signed Registration Printouts Due (5:00pm)
- 11 Veteran's Day observed – a holiday
- 19 Withdrawal Deadline: Fall 1 Semester and Fall 2 Term courses (5:00pm)\*
- 25-26 Thanksgiving Recess

#### DECEMBER-JANUARY

- 02 Registration for Spring 2011 begins  
Registration for Winter Session courses that are part of the Spring Semester
- 16 Deadline to Submit Intent to register Form: for TAP/Affiliates and Non-Harvard Cross-Registrants for Winter Session Term courses (4:00pm)
- 17 Fall Semester and Fall 2 Term courses end
- 20-31 Winter Recess

### SPRING SEMESTER 2011

#### JANUARY 2011

- 01 New Year's Day Observed – a holiday
- 03 Winter Session courses begin
- 03 GRADES DUE: Fall I Semester and Fall 2 Term courses
- 03 Add Deadline: Winter Session: for all degree and non-degree students (Drop/Change deadline is the second day of the course)
- 17 Martin Luther King, Jr. Day – a holiday
- 18 Deadline to submit Intent to Register form: for TAP/Affiliates and Non-Harvard Cross-Registrants for Spring Semester and Spring1 Term courses
- 21 Winter Session courses end
- 24 Spring Semester and Spring 1 Term courses begin
- 28 GRADES DUE: Winter Session courses

#### FEBRUARY

- 04 Add/Drop/Change Deadline: Spring Semester & Spring1 Term courses for all degree and non-degree students  
Final Signed Registration Printouts Due (5:00pm)
- 18 Withdrawal Deadline: Spring1 term courses\*
- 21 Presidents' Day – a holiday

#### MARCH

- TBA March Degree Voting Date
- 11 Spring Term 1 courses end
- 14 Deadline to submit Intent to register form: for TAP/Affiliates and Non-Harvard Cross-Registrants for Spring 2 Term courses.
- 14-18 Spring Recess
- 18 GRADES DUE: Spring 1 Term courses
- 21 Spring 2 Term courses begin

**APRIL**

- 01 Add/Drop/Change Deadline: Spring 2 Term  
Courses for all degree and non-degree students  
Final Signed Registration Printouts Due  
(5:00pm)
- 15 Withdrawal Deadline: Spring Semester and  
Spring 2 Term courses\*

**MAY**

- 13 Spring Semester and Spring 2 Term courses  
end
- 17 GRADES DUE: Spring Semester and Spring 2  
Term courses
- 26 Commencement
- 30 Memorial Day – a holiday

\*The notation WD will be permanently noted in the student's academic  
record

**SUMMER SEMESTER 2011**

**To be announced.**

# The Harvard

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## EDUCATION AND RESEARCH CENTER

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### CURRICULA

#### ACCREDITATION

The Occupational and Environmental Medicine Residency is reviewed on a periodic basis by the Residency Review Committee for Preventive Medicine, which is composed of the American Board of Preventive Medicine and the AMA Council on Medical Education. The Program was reaccredited in 2008 for a full five years by the Accreditation Council for Graduate Medicine (ACGME) to offer graduate medical education of two years duration, i.e., both academic and practicum years, in occupational and environmental medicine.

The professional master's degrees in Occupational Health are accredited by the Council for Education in Public Health (CEPH).

The Occupational Health Nurse Practitioner Program is accredited by the Commission on Collegiate Nursing Education. In June of 2004, full accreditation was granted for the next five years. Graduates of the program are qualified to take the Board Certification exam in Adult Primary Care.

#### COURSE DESCRIPTIONS

Course information from all of Harvard's faculties is available on-line on the internet, tools that facilitate browsing and searching information on the Internet. Course descriptions, faculty information, and other material are included, and the system allows for searching information across Harvard schools as well as within a single school.

To access the course catalogs with a web browser use [www.harvard.edu/academics/catalogs.html](http://www.harvard.edu/academics/catalogs.html) for access to all Harvard Schools. You may use [www.hsph.harvard.edu/registrar](http://www.hsph.harvard.edu/registrar) for HSPH course meeting times. Occupational Health Nursing Program can be accessed through Simmons Graduate School for Health Studies, Occupational Health Nursing [www.simmons.edu/shs/academics/nursing/](http://www.simmons.edu/shs/academics/nursing/).

#### GRADED CREDITS

Students admitted to a one-year program must spend a minimum of one academic year in residence at the University and successfully complete a program of at least forty credit units. Students admitted to a two-year program must spend

two academic years in residence and successfully complete a program of at least eighty credit units. The School requires that one-year degree candidates subscribe to thirty credit units and two-year degree candidates to sixty credit units on the ordinal grading system. Students receiving two masters' degrees from the School in successive years need a minimum of thirty ordinal graded credits the first year and a total of sixty over the two years.

#### EOME POLICY FOR WAIVER OF WRITTEN DOCTORAL QUALIFYING EXAMINATIONS

After the completion of the student's second academic year and approval by CAD of the prospective program, students may request a waiver of the written examination. A student must hold a minimum 3.5 GPA in required courses in order to be eligible to request a waiver for the written examination. The student will submit a written request (downloaded from the website), to the EOME program director requesting a waiver of written exam and granting EOME access to their academic folder.

In addition, the student will schedule a research presentation for the EOME faculty at an EOME faculty meeting. The presentation should describe briefly the student's proposed thesis research topic and design. The presentation should last no more than 10 minutes and, should be no more than 3 slides. The presentation will allow faculty to become more familiar with the research projects of all students in the program, and also allows for faculty to offer suggestions and to ask the student questions.

This presentation is for informational purposes only, and will be scheduled after the faculty has reviewed the student's record and determined that a waiver of the written examination is warranted.

#### WINTER SESSION

Considered part of the Spring Semester, Winter Session is a special term at the Harvard School of Public Health, which runs from January 3 through January 21, 2011. For students and faculty, Winter Session provides a break from the academic routine of the fall and spring semesters, and offers opportunities for creativity and innovation in learning and teaching.

All MPH students must follow MPH Winter Session guidelines. Departmental guidelines cannot be substituted. Consult <http://www.hsph.harvard.edu/registrar/WinterSession>. This site presents all the information needed to guide you through the processes of Winter Session.

All full-time MPH students are expected to participate in Winter Session. Each student must submit an agreement that designates the nature of the student's Winter Session activity. All agreements must be signed by the concentration leader or Assistant Dean for Professional Education, Roberta Gianfortoni, and be submitted to the MPH Program Office no later than Wednesday, December 8, 2010.

Please see the MPH Program Guidelines and/or the web for details regarding suggested/allowable Winter Session activities. If you have additional questions, please contact the Registrar's Office directly at 617-432-1032 or [registra@hsph.harvard.edu](mailto:registra@hsph.harvard.edu).

The department is also offering a special winter session course EH 330: Field Experience in International Occupational Health and Safety. This intensive two to three week course, in collaboration with Kaohsiung Medical University's (KMU) Graduate Institute of Occupational Safety and Health, will focus on several major heavy industries in Kaohsiung, Taiwan. This course will be also attended by master and doctoral students from Graduate Institute of Occupational Safety and Health, KMU. Lectures will cover these industrial processes and their known health and safety risks. Students will be taken on several supervised site visits to each industry, and will be encouraged to process their observations through interactive discussions. This course will also provide exposure to cultural issues around work, work organization, labor-management relations, and governmental and academic roles relevant to occupational safety and health in these settings. The faculty includes several HSPH alumni and experts in southern Taiwan, including Ming-Tsang Wu, MD, ScD, MOH; Chiung-Yu Peng, PhD; Yung-Chang Lai, PhD; Chih-Wei Lu PhD; Jin-Lian Tsai PhD; Chi-Kung Ho, MD, MPH.

Course Activities: Site visits; seminar presentations (case-study participatory approach). Site visits will be supervised by the above faculties, along with exposure assessment experts from the industries. Written reports of site visits will be prepared by students, with oral presentations and discussion.

Course Credit: 2.5 credits. Grading: Pass-Fail.

Applications: Please send an inquiry and CV to Prof. David Christiani ([dchris@hsph.harvard.edu](mailto:dchris@hsph.harvard.edu)) by October 15, 2010.

## HAZARDOUS SUBSTANCE ACADEMIC TRAINING

Subspecialty training in hazardous substances is offered in the Master's program in occupational hygiene (also known as industrial hygiene). The goal of this track is to help fill the growing need for industrial hygienists who are skilled in the recognition, evaluation, and control of health problems associated with hazardous substances, particularly during hazardous waste operations (e.g., clean up of Superfund sites) and emergency response activities necessitated by the accidental or intentional release of hazardous substances. In addition to the course requirements for the occupational hygiene degree, supplementary hazardous-substance related courses are necessary. Also, either the School-required practicum or occupational hygiene internship should involve hazardous substances. Students completing the hazardous substance academic training program receive a certificate of completion for 40-hour hazardous waste operations and emergency response health and safety training, an OSHA requirement for work on Superfund sites and with related operations involving hazardous substances.

## OCCUPATIONAL (INDUSTRIAL) HYGIENE/ERGONOMICS INTERNSHIP

The internship program is recommended for students who do not have practical occupational hygiene/ergonomics/safety experience. Students are employed for a three-month period under the direction of company mentors who are qualified and experienced professionals and students are paid a salary agreed upon by Harvard and the company. During the first half of the period the student usually gains practical experience in

the use of field instruments for measuring air contaminants and physical stresses such as noise, for measuring effectiveness of control systems and interventions, and utilizing existing occupational health and safety data bases for data collection and analysis. The second half is devoted to an applied research project of interest to the company, which encourages the student to develop a talent for applied research. For students not participating in the formal internship program, opportunities for work experience during the summer break are often available.

## OCCUPATIONAL AND ENVIRONMENTAL MEDICINE RESIDENCY

PLEASE NOTE: MPH or MOH degree candidates in the Occupational Environmental Medicine Residency Program (OEMR)

Effective: September 2005

1) All students who are in the residency must take the following courses/credits for an ordinal grade at HSPH:

- the first 5 credits of HSPH epidemiology (summer or academic year)
- the first 5 credits of HSPH biostatistics (summer or academic year)
- Occupational and Environmental Epidemiology (ID 215)
- Occupational and Environmental Medicine (EH 232)
- the Practice of Occupational Health (ID 263)

2) For all students who are in the residency: ANY requests for Pass/Fail status in any courses must have the signed approval of an EOME faculty member. In the event that the deadline is close and no faculty person is available to sign the form in person, verbal or email permission to have Roberta Gianfortoni sign the form may be given to Roberta by an EOME faculty member or by Ann Backus.

## CURRICULA

Curricula for the training programs and course schedules for the Fall and Spring semesters follow this text. Students receiving financial aid through the Education and Research Center must engage in an appropriate occupational safety and health program as presented here. Degrees are offered at the masters and doctoral levels.

### REQUIRED HUMAN SUBJECTS TRAINING

All students engaged in human subject's research must fulfill human subjects training requirements every two years. For more information regarding training requirements, please go to the HSPH Human Subjects Committee website. <http://www.hsph.harvard.edu/research/human-subjects-committee/education/>

## OCCUPATIONAL AND ENVIRONMENTAL MEDICINE ONE-YEAR MOH OR MPH DEGREE PROGRAM

### SUMMER SESSION<sup>a</sup>

(The Summer Session of the Clinical Effectiveness Program {CEP} is recommended for all occupational and environmental medicine residents. 15 credits must be taken.) Courses taken in CEP or traditional Summer School sessions replace some listed here for Fall and Spring.

<b>BIO 206<sup>b</sup> (Summer1)</b>	
Introductory Statistics for Medical Research	2.5
<b>BIO 207<sup>c</sup> (Summer2)</b>	
Statistics for Medical Research II	2.5
<b>BIO 208<sup>c</sup> (Summer2)</b>	
Statistics for Medical Research, Advanced	2.5
<b>EH 202<sup>m</sup> (Summer2)</b>	
Principles of Environmental Health	2.5
<b>EPI 208<sup>b</sup> (Summer)</b>	
Introduction to Clinical Epidemiology	5.0
<b>EPI 500 (Summer1)</b>	
Fundamentals of Epidemiology	2.5
<b>ID 215 (Summer1)</b>	
Occupational and Environmental Epidemiology	2.5
<b>ID 251<sup>d</sup> (Summer1)</b>	
Ethical Basis of the Practice of Public Health: Health Care Delivery	2.5
<b>SHDH 201<sup>g</sup> (Summer1)</b>	
Society and Health	2.5
<b>SHDH250 (Summer2)</b>	
Research Social Behavior and Health (Approved option)	2.5

### **FALL SEMESTER**

<b>BIO 200<sup>e</sup> (Fall)</b>	
Principles of Biostatistics	5.0
<b>BIO 213<sup>p</sup> (Fall)</b>	
Applied Regression for Clinical Research	5.0
<b>EH 201* (Fall2)</b>	
Introduction to Environmental Health	2.5
<b>EH 243<sup>h</sup> (Fall)</b>	
Ergonomics/Human Factors	2.5
<b>EH 262<sup>k</sup> (Fall)</b>	
Introduction to the Work Environment	2.5
<b>EH 504<sup>o</sup> (Fall)(Sec1, Sec 2)</b>	
Principles of Toxicology	5.0, 2.5
<b>EPI 200<sup>f</sup> (Fall1)</b>	
Principles of Epidemiology	2.5
<b>ID 250<sup>i,j,k</sup> (Fall1)</b>	
Ethical Basis of the Practice of Public Health	2.5
<b>SHDH 201<sup>g</sup> (Fall1)</b>	
Society and Health (or approved option)	2.5
<b>SHDH 281 (Fall2)</b>	
Principles of Social and Behavioral Research (Or approved option 10-2011)	2.5

### **WINTER SESSION**

<b>EH 281<sup>k</sup> (Winter)</b>	
Occupational Health Care Delivery (Offered 2011)	2.5
<b>EH 330 (Winter)</b>	
Field Experience in International Occupational Health Safety (Offered 2011)	2.5

### **SPRING SEMESTER**

<b>EH 231<sup>k</sup> (Spring)</b>	
Occupational Health Policy and Administration	2.5
<b>EH 232<sup>k</sup> (Spring)</b>	
Introduction to Occupational and Environmental Medicine	2.5
<b>EH 241<sup>h</sup> (Spring)</b>	
Occupational Safety	2.5

<b>ID 215 (Spring)</b>	
Environmental and Occupational Epidemiology	2.5
<b>ID 250<sup>i,l,m</sup> (Spring1)</b>	
Ethical Basis of the Practice of Public Health	2.5
<b>ID 263<sup>k</sup> (Spring)</b>	
Practice of Occupational Health	5.0
<b>MIT 10.805J*</b>	
Technology, Law, and the Working Environment	5.0
* Elective	
<b>a</b> The Clinical Effectiveness Program (CEP) is recommended for all occupational and environmental medicine residents. Please discuss with Ann Backus.	
<b>b</b> Required if enrolled in Summer Session. (CEP)	
<b>c</b> BIO 206 and BIO 207summer2 or BIO 208summer2 required if enrolled in CEP; BIO 208summer2 is more highly recommended as preparation for the Residency research projects, if available.	
<b>d</b> Available during the summer or regular academic year; one of these (ID 250fall2 or ID 251summer1) should be taken.	
<b>e</b> Not to be taken if BIO 206summer1 and BIO 207summer2 (or BIO 208summer2) taken during the Summer.	
<b>f</b> Not to be taken if EPI 208summer or 2.5-5.0 credits of another basic EPI taken during the Summer.	
<b>g</b> Either SHDH 201summer1, SHDH 201fall1, or an approved option must be taken. 2009-2010 approved options have changed.	
<b>h</b> EH 243fall or EH 241spring required.	
<b>i</b> Elective in the MOH Program; required in the MPH Program.	
<b>j</b> Not to be taken if ID 251summer1 taken during the Summer. Alternative is ID 250spring1 or ID 250 fall1.	
<b>k</b> Required for Residency.	
<b>l</b> Not to be taken if ID 251summer2 taken during the Summer.	
<b>m</b> To be taken if ID 251 is not offered.	
<b>n</b> not required for residency.	
<b>o</b> With permission from S. Kales, Section 2 (~66%) may be taken for 2.5 credits. See Ann Backus.	
<b>p</b> Recommended.	

Reminder: A total of 42.5 credits must be taken for MPH or MOH degree; The cost of credits beyond 42.5 is the responsibility of the student.

# This track must be taken if in the occupational and environmental medicine residency.

## **GENERAL OCCUPATIONAL AND ENVIRONMENTAL HEALTH ONE-YEAR MPH DEGREE PROGRAM**

### **FALL SEMESTER**

<b>BIO 200 (Fall) or BIO 201 (Fall)</b>	
Principles of Biostatistics or Introduction to Statistical Methods	5.0
<b>EH 201<sup>a</sup> (Fall2)</b>	
Introduction to Environmental Health	2.5
<b>EH 243<sup>b</sup> (Fall)</b>	
Ergonomics/Human Factors	2.5
<b>EH 504 (Fall)</b>	
Principles of Toxicology	5.0
<b>EH 262 (Fall)</b>	
Introduction to the Work Environment	2.5
<b>EPI 200<sup>c,d</sup> (Fall1)</b>	
Principles of Epidemiology	2.5
<b>ID 250<sup>f</sup> (Fall1)</b>	
Ethical Basis of the Practice of Public Health	2.5
<b>SHDH 201<sup>e</sup> (Fall1)</b>	
Society and Health (or approved option)	2.5

### **WINTER SESSION**



<b>EH 280 (Winter)</b> Field Methods in Environmental Health	2.5
<b>EH 281 (Winter)</b> Occupational Health Care Delivery (Offered 2011)	2.5
<b>EH 330 (Winter)</b> Field Experience in International Occupational Health Safety	2.5

### **SPRING SEMESTER**

<b>BIO 210* (Spring)</b> The Analysis of Rates and Proportions	5.0
<b>EH 231 (Spring)</b> Occupational Health Policy and Administration (or approved policy/management option)	2.5
<b>EH 232* (Spring)</b> Introduction to Occupational Medicine	2.5
<b>EH 241<sup>b</sup> (Spring)</b> Occupational Safety	2.5
<b>ID 215<sup>g</sup> (Spring)</b> Environmental and Occupational Epidemiology	2.5
<b>ID 263 (Spring)</b> Practice of Occupational Health	5.0
<b>EH 278* (Spring2)</b> Health and Global Environment	2.5

\* Elective

**a** Either EH 201fall2 or EH 202spring1 recommended.

**b** Either EH 243fall or EH 241spring recommended.

**c** Either EPI 200fall1, EPI 201fall1, or EPI 200summer1.

**d** Not to be taken if EPI 200summer1 taken during the Summer.

**e** Either SHDH 201fall1, SHDH 201summer1, or SHDH 281fall2 required.

**f** Not to be taken if ID 251summer1 taken during the Summer.

**g** Not to be taken if ID 215summer2 taken during the Summer.

## **TWO-YEAR ENVIRONMENTAL AND OCCUPATIONAL HEALTH MASTER'S DEGREE PROGRAM**

### **FALL SEMESTER, FIRST YEAR**

<b>BIO 201 (Fall)</b> Introduction to Statistical Methods	5.0
<b>EH 243<sup>a,b</sup> (Fall)</b> Ergonomics/Human Factors	2.5
<b>EH 504 (Fall)</b> Principles of Toxicology	5.0
<b>EPI 200<sup>b</sup> (Fall1) or EPI 201<sup>b</sup> (Fall1)</b> Principles of Epidemiology or Introduction to Epidemiology	2.5

### **WINTER SESSION, FIRST YEAR**

<b>EH 281* (Winter)</b> Occupational Health Care Delivery (Offered 2011)	2.5
<b>EH 330 (Winter)</b> Field Experience in International Occupational Health Safety	2.5

### **SPRING SEMESTER, FIRST YEAR**

<b>BIO 210 (Spring)</b> The Analysis of Rates and Proportions (or alternate)	5.0
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<b>EH 241<sup>b</sup> (Spring)</b> Occupational Safety	2.5
<b>EH 231* (Spring)</b> Occupational Health Policy and Administration <b>ID 215</b> Occupational and Environmental Epidemiology	2.5

### **FALL SEMESTER, SECOND YEAR**

<b>EH 236 (Fall)</b> Epidemiology of Environmental and Occupational Health Regulations (Not offered 2010)	5.0
<b>EH 262 (Fall)</b> Introduction to the Work Environment	2.5
<b>SHDH 201* (Fall1)</b> Society and Health (or alternate)	2.5

### **WINTER SESSION, SECOND YEAR**

<b>EH 281* (Winter)</b> Occupational Health Care Delivery (Offered 2011)	2.5
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### **SPRING SEMESTER, SECOND YEAR**

<b>EH 202*<sup>a</sup> (Spring1)</b> Principles of Environmental Health	5.0
<b>ID 208 (Spring)</b> Pathophysiology of Human Disease (Not offered 2011)	5.0
<b>ID 263 (Spring)</b> Practice of Occupational Health	5.0
<b>RDS 500* (Spring2)</b> Risk Assessment	2.5
<b>EH 278* (Spring2)</b> Health and Global Environment	2.5

\* Elective

**a** Either EH 243fall or EH 241spring recommended

**b** Either EPI 200fall1, EPI 201fall1

## **OCCUPATIONAL HYGIENE/ ERGONOMICS/HAZARDOUS SUBSTANCE TWO-YEAR SM DEGREE PROGRAM WITH OCCUPATIONAL (INDUSTRIAL) HYGIENE INTERNSHIP**

### **FALL SEMESTER, FIRST YEAR**

<b>BIO 201 (Fall)</b> Introduction to Statistical Methods	5.0
<b>EH 205 (Fall)</b> Human Physiology	5.0
<b>EH 243 (Fall)</b> Ergonomics/Human Factors	2.5
<b>EH 262 (Fall)</b> Introduction to the Work Environment	2.5
<b>EH 510 (Fall)</b> Fundamentals of Human Environmental Exposure Assessment	2.5
<b>EPI 200 (Fall1)</b> Principles of Epidemiology	2.5

### **WINTER SESSION, FIRST YEAR**

<b>EH 516</b> Environmental Genetics	2.5
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(Not offered 2011)

<b>EH 517</b>	
Ecotoxicology (Not offered 2011)	2.5
<b>EH 330 (Winter)</b>	
Field Experience in International Occupational Health Safety	2.5

**SPRING SEMESTER, FIRST YEAR**

<b>EH 231 (Spring)</b>	
Occupational Health Policy & Administration	2.5
<b>EH 241 (Spring)</b>	
Occupational Safety and Injury Prevention	2.5
<b>EH 250</b>	
Protecting Workers & Communities from Hazardous Substances	2.5
<b>EH 253</b>	
Ventilation	2.5
<b>ID 263 (Spring)</b>	
Practice of Occupational Health	5.0
<b>RDS 500 (Spring2)</b>	
Risk Assessment	2.5

**SUMMER SEMESTER**

Summer Internship

**FALL SEMESTER, SECOND YEAR**

Full time Internship EH 303 or combination of practicum and other coursework including:

<b>EH 256*(Fall)</b>	
Introduction to Aerobiology	2.5
<b>EH 279*(Fall)</b>	
Radiation Environment: Its Identification, Evaluation and Control	2.5
<b>EH 504 (Fall)</b>	
Principles of Toxicology (01)	5.0
<b>EH 507 (Fall)</b>	
Environmental Exposure, Epidemiology and Risk Practicum	5.0
<b>SHDH 201 (Fall1)</b>	
Society and Health	2.5
<b>Other electives as arranged with your advisor</b>	5.0

**WINTER SESSION, SECOND YEAR**

Other electives as arranged with your advisor

**SPRING SEMESTER, SECOND YEAR**

<b>EH 263 (Spring)</b>	
Analytical Methods and Exposure Assessment	5.0
<b>EH 267 (Spring)</b>	
OH/ERGO Internship and Environmental Sciences Research Seminar	2.5
<b>EH 254* (Spring)</b>	
Evaluation & Control of Noise & Vibration (Not offered 2011)	2.5
<b>EH 292* (Spring)</b>	
Properties & Behavior of Airborne Particles	2.5
<b>ID 215 (Spring)</b>	
Environmental and Occupational Epidemiology	2.5

**OH STUDENTS WHO DO THE "HAZARDOUS SUBSTANCE" SUBSPECIALTY ARE ALSO REQUIRED TO TAKE TWO OF THE FOLLOWING COURSES**

<b>ID 287</b>	
Bioterrorism: Public Health Preparedness	

and Response (Not offered 2010-2011)	2.5
<b>ID 517 (Winter)</b>	
Public Health Response to Mass Emergencies (Not offered 2010-2011)	2.5

<b>EH 517 (Winter)</b>	
Ecotoxicology (Not offered 2011)	2.5
<b>EH 516 (Winter)</b>	
Environmental Genetics (Not offered 2011)	2.5
<b>GSD 6323 (Spring)</b>	
Brownfield practicum	2.5
<b>MIT 1.812J</b>	
Regulation of Chemicals, Radiation, and Biotechnology	5.0
<b>MIT 11.370</b>	
Brownfields Policy and Practice	5.0
<b>Other hazardous substance related course approved by your advisor</b>	

\* NOTE: Given in 2010

**STUDENTS WHO CONCENTRATE IN ERGONOMICS ARE ALSO REQUIRED TO TAKE THE FOLLOWING, IN PLACE OF SOME OH ELECTIVES**

<b>EH 296 (Spring)</b>	
Occupational Biomechanics	5.0
<b>EH 282</b>	
Injury Epidemiology	2.5
<b>ID 240 (Spring1)</b>	
Principles of Injury Prevention	2.5

Additional electives other than the courses listed may be chosen. Other potential electives may be found in the curriculum listings for the Risk Assessment, Environmental Epidemiology, and Occupational Hygiene/Ergonomics/Hazardous Substance Tracks. In addition, there are many courses available at Harvard and MIT that may be suitable electives. Consult your advisor for course recommendations that may be suitable to your specific area(s) of interest.

# A list of suggested electives for both these programs may be obtained from EER Office. MIT&HSPH courses are available.
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**ERGONOMICS  
TWO-YEAR SM DEGREE PROGRAM (80 CREDITS)**

**FALL SEMESTER**

<b>BIO 201 (Fall)</b>	
Introduction to Statistical Methods	5.0
<b>EH 205 (Fall)</b>	
Human Physiology	5.0
<b>EH 243 (Fall)</b>	
Ergonomics/Human Factors	2.5
<b>EH 262 (Fall)</b>	
Introduction to the Work Environment	2.5
<b>EH 504 (Fall)</b>	
Principles of Toxicology	2.5
<b>EH 510 (Fall)</b>	
Fundamentals of Environmental Exposure Assessment	2.5

**EPI 201 (Fall1)**  
Epidemiologic Methods I 2.5

**SPRING SEMESTER**

**EH 231 (Spring)**  
Occupational Health Policy & Administration 2.5  
**EH 241 (Spring)**  
Occupational Safety and Injury Prevention 2.5  
**EH 253 (Spring)**  
Ventilation 2.5  
(Offered 2011)  
**ID 263 (Spring)**  
Practice of Occupational Health 5.0  
**RDS 500 (Spring2)**  
Risk Assessment 2.5

**REQUIRED (ERGO) COURSES OFFERED ALTERNATE YEARS**

**EH 296 (Spring)**  
Occupational Biomechanics 5.0  
(Offered 2011)  
**EH 250 (Spring)**  
Protecting Workers from Hazardous Substances 2.5  
(Offered 2011)  
**EH 253 (Spring)**  
Ventilation 2.5  
(Offered 2011)  
**EH 254 (Spring)**  
Evaluation and Control of Noise & Vibration 2.5  
(Not offered 2011)  
**EH 263 (Spring)**  
Analytical Chemistry and Exposure Assessment 5.0  
(Not offered 2011)

**OTHER RECOMMENDED COURSES (ERGO)**

Additional 5 Credits of Biostatistics—or—2.5 Biostatistics & HPE299d  
**EH 236 (Fall)**  
Epidemiology of Environmental and Occupational Health Regulations 5.0  
(Not offered 2010)  
**EH 273 (Fall)**  
OH/ ERGO Internship (second year) 20.0  
**EH 267 (Spring)**  
OH/ ERGO Internship Seminar (second year) 2.5  
(Offered 2011)  
**ENG SCI 145**  
Intro. to Sys. Anal. with Physiological Applications 5.0

**DOCTORAL PROGRAMS IN OCCUPATIONAL HEALTH**

Doctoral education at The Education and Research Center (ERC) is provided in several concentrations relevant to Occupational Safety and Health. The Doctor of Science degree in Environmental Health with concentrations or areas of interest in Occupational Health, Occupational Epidemiology, Occupational Hygiene, Occupational Health Services Research, Injury Epidemiology, Occupational and Environmental Molecular Epidemiology and Environmental Genetics are offered. The doctoral programs are structured to give students exposure to key components of research: study design, field experience, relevant laboratory experience, and statistical analysis.

The Candidates may be admitted to a doctoral program in more than one discipline if the program meets the

requirements of both departments. Usually, three to four years following the master's program are necessary to complete requirements for the award of doctoral degree. Following are the curricula for the pre-doctoral and post-MD doctoral programs. Students admitted will either be recent college graduates in biology, natural science or mathematics, or will be students with a Master's degree in one of these disciplines. Persons accepted must have an outstanding record in science courses and a high quantitative GRE score. Preference will be given to students with a prior Master's degree who have had experience in fields relevant to epidemiology and occupational health. Usually, these students will enroll directly in the doctoral program.

Students without a prior Master's degree will spend most of their first two years in formal courses in epidemiology, biostatistics, occupational health, occupational hygiene and exposure assessment, physiology and toxicology. In their third or fourth semester at HSPH, pre-doctoral students identify a thesis topic and work on that until completion of the doctoral degree. The total time in training at HSPH is four to five years.

The following is a list of didactic courses that will be required for pre-doctoral students. Exceptions to these requirements will be made only if suitable prior training (e.g., MD degree, Master's degree) or alternate courses exist. A description of each course is provided in the school course catalogue. Ordinarily, a 2.5 -credit course has 32 class-hours per semester and a 5.0-credit has 64 class-hours per semester.

**CORE COURSES REQUIRED OF ALL OCCUPATIONAL HEALTH DOCTORAL TRACKS**

**In addition to school-wide requirements for basic core courses in biostatistics and epidemiology, all doctoral students must take the following core courses:**

**EH 262** Introduction to the Work Environment – 2.5  
**ID 263** Practice of Occupational Health – 5.0  
**EH 231** Occupational Health Policy & Administration – 2.5  
**ID 215** Environmental & Occupational Epidemiology – 2.5  
**EH 236** Epidemiology of Occupational & Environmental Health Regulations – 5.0

**REQUIRED HUMAN SUBJECTS TRAINING**

All students engaged in human subjects research must fulfill human subjects training requirements every two years. For more information regarding training requirements, please go to the HSPH Human Subjects Committee website. <http://www.hsph.harvard.edu/research/human-subjects-committee/education/>

**OCCUPATIONAL EPIDEMIOLOGY CURRICULUM**

Doctoral students in occupational epidemiology, occupational health, occupational injury epidemiology and occupational and environmental molecular epidemiology will spend their first two years completing coursework described below, with additional courses in epidemiology, biostatistics, and biomarkers. Doctoral students pursuing areas of interest in occupational and environmental molecular epidemiology will take additional courses in genetics and biomarkers and a laboratory rotation.

**PRE-DOCTORAL YEAR ONE**

<b>BIO 201<sup>a</sup> (Fall)</b>	
Principles of Biostatistics	5.0
<b>EH 205 (Fall)</b>	
Human Physiology	5.0
<b>EH 262 (Fall)</b>	
Introduction to the Work Environment	2.5
<b>EPI 201 (Fall1)</b>	
Epidemiologic Methods I	2.5
<b>EPI 202 (Fall2)</b>	
Elements of Epidemiologic Research	2.5
<b>BIO 210 (Spring)</b>	
Analysis of Rates and Proportions	5.0
<b>EH 231 (Spring)</b>	
Occupational Health Policy & Administration	2.5
<b>EPI 203* (Spring2)</b>	
Study Design in Epidemiology Research	2.5
<b>EPI 204 (Spring2)</b>	
Analysis of Case-Control and Cohort Studies	2.5
<b>ID 215 (Spring)</b>	
Environmental and Occupational Epidemiology	2.5
<b>ID 263 (Spring)</b>	
Practice of Occupational Health	5.0
<b>Electives</b>	5.0-10.0
* Elective	

### **PRE-DOCTORAL YEAR TWO**

<b>EH 236 (Fall)</b>	
Epidemiology of Environmental and Occupational Health Regulations (Not offered 2010)	5.0
<b>EH 243 (Fall)</b>	
Ergonomics/Human Factors	2.5
<b>EH 504 (Fall)</b>	
Principles of Toxicology	5.0
<b>EH 231 (Spring)</b>	
Occupational Health Policy and Administration	2.5
<b>EH 269 (Spring)</b>	
Exposure Assessment for Environmental and Occupational Epidemiology	2.5
<b>Electives</b>	15-22.5

**a** Either BIO 201fall or BIO 213fall required.

### **OCCUPATIONAL EXPOSURE ASSESSMENT/OCCUPATIONAL (INDUSTRIAL) HYGIENE DOCTORAL CURRICULUM**

Doctoral students should work closely with their advisors to develop individualized programs based on experience and needs. Depending upon each student's research interests, certain courses may be more or less important to include.

Course requirements must take or be waived from the following course listed below.

### **COURSE REQUIREMENTS SPECIFIC TO OCCUPATIONAL EXPOSURE ASSESSMENT**

<b>BIO 201 (Fall)</b>	
Principles of Biostatistics	5.0
<b>EPI 200 (Fall1)</b>	
Principles of Epidemiology	2.5

<b>EPI 201 (Fall1)</b>	
Epidemiologic Methods I	2.5
<b>EH 205 (Fall)</b>	
Human Physiology	5.0
<b>EH 510 (Fall)</b>	
Fundamentals of Environmental Exposure Assessment	2.5
<b>RDS 500 (Spring2)</b>	
Risk Assessment	2.5
<b>EH 520<sup>a</sup></b>	
Research Design in Environmental Health	2.5

**a EH520** is a course offered in Spring of Year 2- the fourth semester. It provides guidance one preparing the research proposal

*All doctoral students must take ten credits of intermediate-level Biostatistics courses.*

Further course selections for doctoral students are determined in collaboration with the advisor to ensure the coursework provides the requisite background for dissertation research and fulfills the major.

### **OCCUPATIONAL INJURY PREVENTION DOCTORAL CURRICULUM**

All Doctoral students in the NIOSH supported occupational injury prevention program will take: a) the course requirements for the School of Public Health, b) those specific to Occupational Health, and c) those specific to Occupational Injury Prevention, as described below.

### **COURSE REQUIREMENTS SPECIFIC TO OCCUPATIONAL INJURY PREVENTION**

<b>BIO 225 (Fall)</b>	
Multiple Regression Analysis (Not offered 2010)	2.5
<b>EH 236 (Fall)</b>	
Epidemiology of Environmental and Occupational Health Regulations (Not offered 2010)	5.0
<b>EH 241 (Spring)</b>	
Occupational Safety and Injury Prevention	2.5
<b>EH 243 (Fall)</b>	
Ergonomics and Human Factors	2.5
<b>EH 282 (Every other Spring2)</b>	
Injury Epidemiology (Not offered 2011)	2.5
<b>ID 240 (Spring1)</b>	
Principles of Injury Control	2.5

### **ELECTIVES**

<b>EH 250</b>	
Protecting Workers and Communities from Hazardous Substances	2.5
<b>EH 254 (Every other Spring)</b>	
Evaluation and Control of Noise and Vibration (Not offered 2011)	2.5
<b>EH 296 (Spring)</b>	
Occupational Biomechanics	5.0
<b>ENG SCI 145<sup>a</sup> (Fall)</b>	
System Analysis and Physiology Applications	5.0
<b>MIT 2.181</b>	
Human Factors Engineering	5.0
<b>MIT 2.182</b>	
Biomechanics and Neural Control of Movement	5.0

a ENG SCI is a course in the Harvard University Faculty of Arts and Sciences.

## **OCCUPATIONAL HEALTH NURSING**

Nursing students in Occupational Health have two program options: a two-year master's program which earns a Nurse Practitioner degree from Simmons College, or a Dual Degree program which results in a master's degree from Simmons and a second master's degree from the Harvard School of Public Health.

### **TWO-YEAR DUAL SM/ MSN DEGREE PROGRAM**

#### **FALL SEMESTER, FIRST YEAR**

<b>NUR 404</b>	
Normal and Abnormal Human Physiology	4.0
<b>SHS 570</b>	
Health Promotion: A Global Perspective	2.0
<b>EH 243 (Fall)</b>	
Ergonomics/ Human Factors	2.5
<b>BIO 200</b>	
Principles of Biostatistics	5.0
<b>EPI 200</b>	
Principles of Epidemiology	2.5
<b>EH 262 (Fall)</b>	
Intro to Work Environment	2.5

#### **WINTER SESSION, FIRST YEAR**

<b>EH 281</b>	
Occupational Health Care Delivery (Offered 2009)	2.5

#### **SPRING SEMESTER, FIRST YEAR**

<b>EH 231 (Spring)</b>	
Occupational Health Policy and Administration	2.5
<b>ID 215 (Spring)</b>	
Environmental and Occupational Epidemiology	2.5
<b>ID 263 (Spring)</b>	
Practice of Occupational Health	5.0
<b>NUR 507</b>	

Scholarly Inquiry I	2.0
<b>NUR 580</b>	
Advanced Health Assessment	2.0
<b>NUR 580A</b>	
Clinical Decision Making I	1.0

#### **SUMMER SESSION, FIRST YEAR**

<b>NUR 508</b>	
Scholarly II	2.0
<b>NUR 581</b>	
Theory & Practice, Primary Health Care Nursing I	2.0
<b>NUR 581A</b>	
Clinical Practicum	1.0

#### **FALL SEMESTER, SECOND YEAR**

<b>EH 236 (Fall)</b>	
Epidemiology of Environmental and Occupational Health Regulations	5.0
<b>EH 504 (Fall)</b>	
Principles of Toxicology	5.0
<b>NUR 422</b>	
Clinical Pharmacology	3.0
<b>NUR 582</b>	
Primary Health Care II	3.0
<b>NUR 582A</b>	
Clinical Decision Making II (Occ Hlth Setting)	3.0

#### **SPRING SEMESTER, SECOND YEAR**

<b>EH 232 (Spring)</b>	
Intro to Occupational and Environmental Medicine	2.5
<b>EH 241 (Spring)</b>	
Occupational Safety	2.5
<b>NUR 509</b>	
Research Practicum	2.0
<b>NUR 584</b>	
Primary Health Care Nursing of the Adult III	3.0
<b>NUR 584B</b>	
Clinical Decision Making in the Workplace	4.0

NUR and SHS courses are at Simmons College and carry Simmons credits.



## The Doctoral Student Timetable

<b>PROGRESS</b>	<b>PROGRESS DUE</b>
Submission of <i>Prospective Program Form</i>	End of 2nd Semester
Submission of <i>Final Program Form</i> Submission of <i>Nomination of Oral Qualifying Examination Committee Form</i> (2 <sup>nd</sup> page of the <i>Final Program Form</i> )	End of 3rd Semester
Submission of <i>Oral Qualifying Examination Scheduling Form</i>	End of 4th Semester
Submission of <i>Nominations for Research Committee Form</i>	One month after successful completion of Oral Examination
Submission of <i>Nominations for Research Committee Form</i>	Six months after passing Oral Examination and twice each year thereafter until dissertation defense
Submission of <i>Application for Degree Form</i>	Before degree granting period in which dissertation is defended
Dissertation Defense	End of 5 <sup>th</sup> year for full-time students. End of 7 <sup>th</sup> year for part-time students

## SCHEDULE: FALL SEMESTER 2010 – 2011

Includes courses for general MPH, residency and nursing, plus other selected courses.

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30 – 9:30	BIO 213 (Fall) ID 250 (Fall1)	BIO 200 <sup>^</sup> (Fall1) BIO 222 (Fall) SHDH 245	BIO 213 (Fall) ID 250 (Fall1)	BIO 200 <sup>^</sup> (Fall1) BIO 222 SHDH 245	EPI 200 <sup>a</sup> (Fall) SHDH 201 <sup>^x</sup> (Fall1)
9:30 – 10:20	BIO 213 (Fall) ID 250 (Fall1)	BIO 200 <sup>^</sup> (Fall) BIO 222 (Fall)	BIO 213 (Fall) ID 250 (Fall1)	BIO 200 <sup>^</sup> (Fall) BIO 222	EPI 200 <sup>a</sup> (Fall) SHDH 201 <sup>^x</sup> (Fall1) EH 507 (Fall)
10:30 – 12:20	EH 201 (Fall2) EH 205 (Fall) EH 279 (Fall) EH 504 (Fall)	EPI 201 (Fall1) EPI 202 (Fall2) EPI 200 <sup>^</sup> (Fall1)	EH 201 (Fall2) EH 205 (Fall2) EH 504 (Fall)	EPI 201 (Fall1) EPI 202 (Fall2) EPI 200 <sup>^</sup> (Fall1)	EH 205 (Fall) EH 507 (Fall) EH 510 (Fall) EPI 201 <sup>a</sup> (Fall1) SHDH 201 <sup>^x</sup> (Fall1)
12:30 – 1:20	ERC Seminar Series 1/month	ENG SCI 145		ENG SCI 145	OEM Rounds/ Research Seminar <sup>b</sup>
1:30 – 2:20	EH 262 (Fall)	ENG SCI 145	EH 243 (Fall)	ENG SCI 145	BIO 200 <sup>a</sup> (Fall) BIO 201 <sup>a</sup> (Fall) EH 256 (Fall) SHDH 281 <sup>^</sup> (Fall2)
2:30 – 3:20	EH 262 (Fall)		EH 243 (Fall)		BIO 200 <sup>a</sup> (Fall) BIO 201 <sup>a</sup> (Fall) EH 256 (Fall)
3:30 – 4:20	SHDH 201 (Fall1) SHH 281 (Fall2)	BIO 201 <sup>^</sup>	SHDH 201 (Fall1) SHDH 281 (Fall2)	BIO 201 <sup>^</sup>	
4:30 – 5:20	SHDH 201 (Fall1) SHDH 281 (Fall2)	BIO 201 <sup>^</sup>	SHDH 201 (Fall1) SHDH 281 (Fall2)	BIO 201 <sup>^</sup>	
5:30 – 6:30					
6:30 – 7:30					
7:30 – 8:30					

### NOTES:

Labs and additional seminar times that are not scheduled until classes meet are not included.  
 Consult Simmons materials for exact course meeting times.  
 ERC Seminar Series: one Monday per month, FXB G12 or as posted.  
 Grand Rounds and Research Seminars, Fridays, Kresge 502 or as posted.  
 Check the course schedules for additional course and lab times.  
 EH300 TBA

### KEY:

**a** Lab in past years; 2010 lab time will be announced at first class.  
**b** Rounds and research seminars alternate Fridays.  
<sup>^</sup> Check begin and end time; they differ from matrix schedule.  
**x** Various sections are available for this course

**SCHEDULE: SPRING SEMESTER 2010 – 2011**  
**BASED ON CURRENT PROPOSED SCHEDULE AND SUBJECT TO CHANGE**

1) TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30 – 9:20	ID 263 (Spring)	BIO 210(Spring)	ID 263 (Spring)	BIO 210(Spring)	EH 241 (Spring)
9:30 – 10:20	ID 263 (Spring)	BIO 210(Spring)	ID 263 (Spring)	BIO 210(Spring)	EH 241 (Spring)
10:30 – 11:20	EH 202 (Spring1) EH 278^ (Spring2) ID 250 (Spring1) EH 292 (Spring)	EPI 204 (Spring1) RDS 500 (Spring2)	EH 202 (Spring1) EH 278^ (Spring2) EH 267 (Spring) ID 250 (Spring1)	EPI 204 (Spring2) RDS 500 (Spring2)	EH 232 (Spring)
11:30 – 12:20	EH 202 (Spring1) EH 278^ (Spring2) ID 250 (Spring1) EH 292 (Spring)	EPI 204 (Spring2) RDS 500 (Spring2)	EH 202 (Spring1) EH 278^ (Spring2) EH 267 (Spring) ID 250 (Spring1)	EPI 204 (Spring2) RDS 500 (Spring2)	EH 232 (Spring)
12:30 – 1:20	ERC Seminar Series (1/month)				OM Rounds/ Research Seminars <sup>b</sup>
1:30 – 2:20	EH 269 (Spring) EH 253 (Spring)	EH 263 (Spring)	ID 215* (Spring)	EH 263 (Spring)	EH 282 (Spring2) ID 296 (Spring) EH 520 (Spring)
2:30 – 3:20	EH 269 (Spring) EH 253 (Spring)	EH 263 (Spring)	ID 215* (Spring)	EH 263 (Spring)	EH 282 (Spring2) ID 296 (Spring)
3:30 – 4:20	EH 231 (Spring)	EPI 203 (Spring2)	EH 250 (Spring) ID 240^ (Spring1)	EPI 203 (Spring2)	
4:30 – 5:20	EH 231 (Spring)		EH 250 (Spring) ID 240^ (Spring1)		
5:30 – 8:30			ID 240^ (Spring1)		

**NOTES:**

NUR and SHS courses are at Simmons College and are subject to change.  
 There are two summer sessions at Simmons: May-June and June-August. Students are involved in clinical sessions and seminars. Consult Simmons materials for exact course meeting times.  
 ERC Seminar Series, one Monday/month, FXB G12 or as posted.  
 Grand Rounds and Research Seminars, Fridays, Kresge Rm 502 or as posted.  
 For MIT courses, call 617-253-4788 or visit their web page at <<http://registrar.mit.edu/schedule/>>.  
 For KSG courses consult Kennedy School of Government.  
 For ENG SCI see Harvard University Faculty of Arts and Sciences.

**KEY:**

**b** Rounds and research seminars alternate.  
<sup>1</sup> For the date of the first meeting, call MIT at 617-253-4788 or consult their web page at <<http://web.mit.edu/registrar/www/schedules/>>.  
 \*ID 215 is not listed in the HSPH catalogue but is retained in this schedule  
 ^ Check begin/end time.  
 < No auditors allowed to enroll.

# The Harvard

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## EDUCATION AND RESEARCH CENTER

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### NON-CREDIT

#### **SEMINAR SERIES IN OCCUPATIONAL SAFETY AND HEALTH**

One Monday per month during academic sessions beginning September 27, 2010, 12:30-1:20 pm, FXB G12, is organized by Dr. Christiani and Ms. Backus.

A variety of topics in occupational safety and health are presented in the seminar series, which primarily features guests from outside the Center and the School. The diversity of speakers has ranged from a lawyer interested in ethical issues of medical screening to a toxicologist working with a major union, and from medical historians to health care professionals working with community groups. A multi-disciplinary approach, including economic and policy issues, is emphasized.

Faculty and students of the Center are expected to attend; staff, visiting scholars, and others with an interest in the broad field of occupational and environmental health are also welcome. Monthly schedules are posted on bulletin boards at the Center, near the elevators, and emailed. Bring your lunch!

#### **OCCUPATIONAL/ ENVIRONMENTAL MEDICINE GRAND ROUNDS**

Alternate Fridays during academic sessions beginning September 17, 2010, 12:30 - 1:20 pm, fall: Kresge 502, organized by Dr. Kales and the chief resident, Dr. Chunbai Zhang.

The purpose of these rounds is to provide residents in occupational and environmental medicine with the opportunity to discuss clinical features of occupational and environmental diseases and their prevention and management. One to three cases are presented during each session by experienced occupational physicians and second-year occupational and environmental medicine residents.

Attendance by first and second-year occupational and environmental medicine residents is required. The sessions have been organized so that first-year residents will have the opportunity to meet rotation proctors for the practicum year. All other MPH, MS Nursing students, MOH degree candidates, OH, and faculty are encouraged to attend as well. Schedules

are posted on bulletin boards at the Center, near HSPH elevators and emailed.

#### **OCCUPATIONAL HEALTH PROGRAM RESEARCH SEMINAR SERIES**

Alternate Fridays during the academic session beginning on September 10, 2010 12:30-1:20 pm, Kresge, Room 502, is organized by Dr. Perry and Hanine Estephan.

The research seminars in occupational safety and health and environmental biostatistics offer a forum for work-in-progress presentations on research by faculty, staff, postdoctoral fellows, doctoral students, second-year residents, and second-year nursing and occupational hygiene master's students of the Center. The focus of the seminar series is issues in epidemiologic research as they relate to occupational and environmental health.

All Center personnel are welcome to attend. First and second year residents in the Occupational and Environmental Medicine Residency Program as well as degree candidates in the MPH (OEH) and MOH programs are required to attend. Schedules are posted on bulletin boards at the Center, near HSPH elevators and emailed.

#### **DISSERTATION WRITING SEMINAR**

Every Wednesday, beginning September 8th, 2010, 3:30-5:20 pm, Donald Halstead, Instructor (dhalstea@hsph.harvard.edu)

Now in its seventh year, this is the only HSPH course that addresses the specific needs of dissertation writers. Our chief activity each week is the discussion of a draft study that has been submitted in advance by a group member. We also examine a wide range of topics and strategies that enable members to improve their scientific writing skills and to manage the complex dissertation process effectively. The seminar's highly creative, supportive, and constructive environment also helps counteract the isolation most dissertation writers experience. The course is open to any HSPH doctoral student who is writing or preparing to write a dissertation. Contact the Instructor for more information as well as to arrange a visit or to sit in on a session.

#### **CONTINUING MEDICAL EDUCATION CREDITS**

The Center for Continuing Professional Education is authorized by the Accreditation Council for Continuing Medical Education to designate that relevant sessions of the Monday Seminars, Grand Rounds, and Research Seminars meet the criteria for credit toward Category 1 of the Physicians Recognition Award of the American Medical Association. All participants must sign attendance roster and complete evaluation of the session.

#### **CONTINUING EDUCATION PROGRAM**

The Continuing Education Program of the Education and Research Center (ERC) provides professional training through occupational safety and health programs for physicians, nurses, industrial hygienists, safety engineers, and other occupational safety and health professionals, paraprofessional and technicians. The ERC Continuing Education Program is managed by the School's Center for Continuing Professional

Education (CCPE). Programs and conferences are offered throughout New England and include annual meetings of professional occupational health and safety associations. Continuing Education Credit is available for all programs, and the specific programs also offer AMA PRA Category 1 Credits™.

The schedule for 2010-11 programs is available in the Kresge G-3 classroom, or on the Center's website: [www.hsph.harvard.edu/ccpe](http://www.hsph.harvard.edu/ccpe). For more information contact Lynn Fitzgerald, Associate Director of ERC Continuing Education, at 617-384-8677.

## **VISITING SCHOLARS CONFERENCES**

The Center's forum for visiting scholars in occupational safety and health is an outreach program designed to influence occupational safety and health curriculum and program development at institutions of higher education and to encourage the interaction of practicing professionals, governmental employees, and legislators with academicians. The mini-conference series is the portion of the visiting scholars program open to students, staff, and faculty of the Center. Agendas for each mini-conference are posted on bulletin boards at the Center. For the '10-'11 year, the first Visiting Scholar Mini-conference is scheduled for Sept 17. Additional Mini-conferences will be held Oct 15, and Nov 19. The 2011 meeting dates are yet to be announced. For more information see Ms. Backus.

## **THE MASSACHUSETTS COALITION FOR OCCUPATIONAL SAFETY AND HEALTH**

The Massachusetts Coalition for Occupational Safety and Health (MassCOSH) brings together unions, professionals, and workplace and community activists in a common quest to make Massachusetts job sites healthy and safe places to work. MassCOSH is the only organization serving eastern and central Massachusetts dedicated solely to empowering unions and workers through building a movement to improve safety conditions on the job. Activities include worker health and safety education, advocacy for workers/unions, publication of a newsletter, and a technical assistance hotline. MassCOSH has an extensive occupational safety and health library, with many materials available in multiple languages. To become a member or inquire about volunteer activities, write or call MassCOSH, 12 Southern Avenue, Dorchester, MA 02124, 617-825-7233 x15 or visit their website at [www.masscosh.org/](http://www.masscosh.org/).

## **THE NEW ENGLAND COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE**

The New England College of Occupational and Environmental Medicine (NECOEM) is a constituent organization of the American College of Occupational and Environmental Medicine (ACOEM). NECOEM sponsors educational activities throughout the academic year in the form of dinner meetings, mini-conferences, workplace site visits, and an annual two-day conference. Special rates are available for residents in occupational medicine and students. You do not have to be a member to participate, nor must you be a physician. Nurses

and occupational hygienists are welcome to attend educational sessions of interest. Notices are posted on bulletin boards at the Center. Contact <dianne@necoem.org> or visit their website at [www.necoem.org](http://www.necoem.org) for further information regarding NECOEM activities.

Any doctor of medicine or doctor of osteopathic medicine who has an interest in the health of workers is eligible for membership in ACOEM, thereby becoming a member of NECOEM. To obtain further information and membership application forms, contact Ms. Backus at 617-432-3327 or contact ACOEM at 25 Northwest Point Blvd., Suite 700, Elk Grove Village, Illinois, 60007-1030, Telephone: (847) 818-1800, [www.acoem.org](http://www.acoem.org). The membership fee for ACOEM is paid by the OEMR Program for residents.

## **THE MASSACHUSETTS ASSOCIATION OF OCCUPATIONAL HEALTH NURSES**

The Massachusetts Association of Occupational Health Nurses (MaAOHN) is the State's constituent association of the American Association of Occupational Health Nurses (AAOHN). MaAOHN promotes the professional goals of occupational health nursing through annual educational programs and by encouraging networking among practicing occupational safety and health professionals. The one-day annual conference, co-sponsored by the Harvard ERC, is open to non-member nurses, physicians, and occupational hygienists.

During the annual business meeting issues regarding current trends, standards of practice, and professional concerns are discussed. The Association serves as an advocate for the profession and is committed to furthering the goals of occupational health nursing. To become a member of AAOHN/MaAOHN call 800-241-8014 for further information, or see Dr. Susan Duty.

## **THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, NEW ENGLAND SECTION**

The New England Industrial Hygiene Association (NEIHA) holds regular half-day and evening meetings in the locality, and welcomes student members. With industrial hygienists from government, industry, and other universities, the group provides excellent contacts for students and operates a local placement service. For further information contact Dr. Herrick at 617-384-8803.

## **THE PUBLIC HEALTH MUSEUM IN MASSACHUSETTS**

In recognition of the significant history of achievements and milestones in public health that occurred in Massachusetts and New England, a museum was introduced to the community in 1994 to protect, preserve, and display historical materials and artifacts that document this rich tradition. It is a place for learning and study, located in the historic old clock tower administration building at Tewksbury Hospital. In addition to serving as a repository for artifacts of public health history, the



Museum also seeks to educate citizens about new developments, programs, and needs in public health today.

The Museum is supported by foundation grants and corporate contributions, as well as membership fees and private donations. The museum is open Wednesday and Thursday 10:00am– 2:00pm and other times by appointment. For information or to make an appointment call: 978-851-7321 ext. 2606. There is a \$5 admission fee to the museum and group rates are available. Information can also be obtained from their website at [www.publichealthmuseum.org](http://www.publichealthmuseum.org).

# The Harvard

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## EDUCATION AND RESEARCH CENTER

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### FINANCES

#### ERC TRAINEESHIP AWARDS

Traineeship awards consisting of partial financial assistance in the form of tuition, stipend, registration fee, health fee, and Blue Cross/Blue Shield hospital insurance are available on a competitive basis to qualified individuals undertaking approved training programs in occupational medicine, occupational health nursing, industrial hygiene, hazardous substances, occupational epidemiology, occupational health services, and occupational injury prevention. Awards are offered through the Education and Research Center for Occupational Safety and Health (ERC) at Harvard.

To maintain eligibility for the award, trainees must meet the academic standards of the School as stated in the current Official Register and must engage in an appropriately planned occupational safety and health program (see the curricula section of this handbook). Compliance with requirements of the Registrar, the Student Financial Aid Office, and the Harvard ERC is also expected.

An appointment under a U.S. Public Health Service (PHS) training grant may not be held concurrently with any other Federal educational award that provides a stipend or otherwise duplicates financial provisions, with the exception of Veterans Administration Benefits (GI Bill). Loans from Federal funds are not considered Federal awards.

Tuition and health insurance awards appear as credits in student accounts. Paperwork for tuition awards is usually completed during the summer so that students may enroll without hindrance in the fall.

Tuition awards are made for a specific number of course credits. The cost of course credits beyond the specified or required curriculum is the responsibility of the student. For example a full-tuition scholarship for the MPH degree pays for 42.5 credits. Credits beyond that number will be paid for by the student. All students should be very sure about what their scholarships cover by checking with their advisor and with Lynn NeJaime.

If a tuition deposit has been made by a student prior to registration and a full tuition award has been granted, the deposit is refundable to the student. To obtain reimbursement,

complete the required form at the School's Financial Aid Office (708 Huntington Avenue). The refund check will be sent by mail.

All students are automatically enrolled in the Blue Cross/Blue Shield insurance plan, but may submit a waiver during matriculation if they have comparable medical insurance.

UHS fee is mandatory for all students registered for more than 10 credits each semester. Part-time students taking 10 or fewer credits may waive this fee and this coverage if on-line waiver form is completed prior to August 31<sup>st</sup> for fall, and February 28<sup>th</sup> spring.

Awarded postdoctoral fellows apply for health insurance at the EOME Administrative Office, SPH1-1402. Health insurance outside the one provided by the University (UHS, BC/BS) is not reimbursed.

Doctoral candidates and residents finishing their first year are granted a three-week paid vacation during the summer. Residents in occupational and environmental medicine must take their vacation between graduation day and June 30th. The dates of the vacation should be reported in writing to the administrator and the student's advisor. This vacation time is in addition to holiday periods observed during the academic year.

Any publications related to projects undertaken while holding an ERC traineeship should bear the acknowledgment below. Seven copies should be given to the administrator.

*Supported by the Education and Research Center for Occupational Safety and Health CDC/NIOSH grant award T42/OH008416 at the Harvard School of Public Health.*

Questions concerning ERC traineeship awards should be addressed to Ms. Pat McGaffigan (Building I, Room 1402, 617-432-2422) or to Kathryn Austin, Director of Financial Aid (Kresge Building, Room G4, 617-432-1989).

#### OCCUPATIONAL PHYSICIANS SCHOLARSHIP FUND (OPSF)

Each year the Occupational Physicians Scholarship Fund (OPSF) awards scholarships to physicians enrolled in occupational medicine residency programs. Applicants may seek funding for training in the Harvard ERC Occupational and Environmental Medicine Residency, which is approved by the Accreditation Council for Graduate Medical Education.

Applications are reviewed by a committee appointed by the OPSF Board of Trustees. Awards include a stipend based on NIOSH/NIH (post-graduate year) guidelines administered by the residency program, and an allowance of up to \$500 to attend the American Occupational Health Conference (Spring) or the ACOEM State-of-the-Art Conference (Fall). Scholarships are recommended based upon academic and professional accomplishments and stated career objectives, in accordance with equal opportunity principles.

The application deadline for 2010-2011 is November 5, 2010. Notification of scholarship awards will be mailed before or on December 15, 2010. For an application form and additional information regarding the OPSF, see Ms. Backus.

Applications and information are available on the OPSF website. URL: [www.opsf.org](http://www.opsf.org).

## **SIMMONS COLLEGE FINANCIAL AID OFFICE**

Students enrolled in the Occupational Health Nursing program may seek assistance from the Simmons College Financial Aid Office at 617-521-2036.

Tuition support is not available through the National Institute for Occupational Safety and Health.

## **STIPENDS**

Awarded students receive the monthly stipends on the first of the month starting September 1 for newcomers and July 1 for OEM first-year residents and continuing students.

Post-doctoral research fellows and second year residents receive the monthly stipends at the end of the month.

Awarded students and fellows should sign up in PeopleSoft for direct deposit and local address updates. Please bear in mind that PeopleSoft is not compatible with the Safari browser on Macintosh computers. Firefox, Netscape browsers, and IE are all fine on all operating systems.

Peoplesoft can be accessed by first obtaining a PIN (<http://www.pin.harvard.edu>) and then logging onto HarvIE (<http://www.harvie.harvard.edu>) and clicking on the link at the top right labeled "PeopleSoft Access". Once in PeopleSoft, the path is Home>Self-Service>Payroll and Compensation>Direct Deposit.

## **POST-DOCTORAL FELLOWSHIPS**

Post-doctoral awards are available for individuals seeking a research career in occupational health and safety areas such as epidemiology and injury prevention.

Support for injury related post-doctoral research is available via The Liberty Harvard Program in Occupational Safety and Health, and in other areas (e.g. epidemiology) from NIH training grants or faculty research grants. For more information, contact Dr. David Christiani.

# The Harvard

## EDUCATION AND RESEARCH CENTER

### INFO

#### ACCOMMODATIONS FOR GUESTS

The ERC recommends a Harvard-affiliated property, The John Jeffries House at 14 David G. Mugar Way in Boston, for housing guests. This facility is located at the foot of Beacon Hill at the corner of Charles and Cambridge Streets, close to the Massachusetts General Hospital and within walking distance of many tourist attractions. The House offers easy access to public transportation and is minutes away from several wonderful shopping districts.

This newly renovated turn-of-the-century house, offering forty-six rooms, has been carefully preserved throughout. Modern amenities have been incorporated and handsome reproduction furnishings are used in all rooms. Almost every room includes a kitchenette. Elevator service transports guests to all four stories of the house, and the entire facility is handicapped accessible. Twenty-four hour indoor parking is available at a rate of \$20 per day. The rates per night, which include continental breakfast, are \$115 for a studio room (\$123 on holidays, Friday and Saturday) and \$139 for a standard room (\$148 on holidays, Friday and Saturday). Suites are also available, ranging from \$164 to \$184. On weekends suite rates are \$10 more. All rates are subject to a 14.45% tax. For reservations call (preferred) 617-367-1866 or fax 617-742-0313.

Another option is Boston Reservations, Boston Bed & Breakfast, Inc. at 67 Linden Woods Road, Waltham, MA 02451 for accommodations at other bed and breakfasts, small hotels and inns, and private clubs within walking distance of the school. Rates start at \$155 per night. For more information call 781-547-5427 or fax 781-547-5420.

The Eliot Hotel located at 370 Commonwealth Avenue, Boston, will offer one- bedroom suites at \$255.00 per night to all Harvard Medical Affiliates. As always, this rate is available on a Last Room Available basis with very limited blackout dates. For more information, please call 617-267-1607.

#### AFTER HOURS TAXI SERVICE

From 9:00pm to 3:00am, Harvard School of Public Health faculty, staff and students with a valid Harvard Longwood

Campus photo ID can obtain taxi vouchers for trips to T-stops or residences within a one-mile radius from campus. Should your destination go beyond the one-mile radius of the campus, the taxi meter will be turned on and you will be responsible for the additional fare. Each taxi will only go to one destination with up to four people. Taxi service is available at anytime during these hours on a first come first serve basis. Please be aware that traffic and weather conditions may affect the timeliness of the taxi service. Interested parties must go to the security desk at the front lobby of the FXB Security Desk, at 651 Huntington Avenue.

#### ALUMNI/AE ASSOCIATIONS

Every graduate of the Harvard School of Public Health is a member of the Harvard Public Health Alumni/ae Association. The Association is governed by an elected body, and news is published twice each year in the Harvard School of Public Health Review. The Association, together with the Alumni/ae Relations Office at the School, works to promote a spirit of fellowship and encourage communication among all graduates. For further information, call the Alumni Relations Office at 617-351-0160.

Graduates of the industrial hygiene program become members of the Harvard Guild of Industrial Hygienists. Members of this organization contribute to internships and graduate employment. Industrial hygiene alumni meet annually at the American Industrial Hygiene Conference to renew acquaintances and learn about the latest developments at the School.

#### BULLETIN BOARDS

Bulletin boards specifically for notices about occupational safety and health are located in Building I on the 14th floor.

#### CLERICAL SERVICES

Typing services are not provided by the Center. However, an individual in training status working on a sponsored research project may be eligible for limited clerical services and should first consult with his/ her faculty advisor.

#### COPYING SERVICES

Access to a copier is generally not provided by the Center for students. However, individuals conducting research under a faculty advisor with sponsored funds may request an exception.

#### COMPUTING AND EMAIL SERVICE

Computers are generally available to research fellows, doctoral students, residents in occupational and environmental medicine, and master's students conducting research. Training and advice from computer programmers is also available.

The School operates an instructional computing facility, dedicated to serving the needs of students and faculty and offering free academic computing and data processing resources. The computer laboratory is used by students for course work, word processing, spreadsheets, file transfer,

basic statistical analysis, and e-mail service. E-mail account application forms may be obtained there. This facility, open daily throughout the entire year, is staffed by user assistants from 9:00am to 9:00pm during the academic year. Swipe access using your Harvard ID card is required weekdays after 6pm and for access during the weekend. The location is the lower level of the Kresge Building. For further information call the user assistance office at 617-432-3165.

## COOP

A branch of the Harvard Cooperative Society or the "Coop" is located in the Longwood Medical Area at 333 Longwood Avenue, tel. 617-499-3300. Among other items, clothing, souvenirs, and books can be purchased there. Hours of business are 9:00am - 9:00pm Monday - Saturday and 10:00 am-7:00pm on Sunday. The main store of the Harvard Cooperative Society is located in Harvard Square in Cambridge, Tel. 617-499-2000. Harvard Square is a stop on the red line of the MBTA.

## COURSE MATERIALS

Unless otherwise announced, course handouts are available only in the classroom, not in the Center's offices. The cost of course materials is the students' responsibility

## DEPARTMENT OF ENVIRONMENTAL HEALTH

The Department of Environmental Health focuses on complex problems that require the insights of many specialties. The department's faculty, research staff, and students reflect the multidisciplinary nature of the field and include chemists, engineers, epidemiologists, applied mathematicians, physicians, industrial hygienists, occupational health nurses, physiologists, and physicists. Teaching and research activities of the department are conducted through three primary programs: Exposure Epidemiology & Risk; Environmental and Occupational Medicine and Epidemiology; and Molecular and Integrative Physiological Sciences. ERC programs bridge departmental programs in occupational health and environmental science and engineering, and include Simmons College as a collaborative institution in the discipline of nursing.

## DISABILITY SERVICES

Services are provided for all students with clinically documented learning and/or physical disabilities, regardless of whether they are full or part-time, participants in a forum, special program, etc. Assistance in academic support, extracurricular activities, residential life, personal assistance, and transportation is available. Andy Eisenmann, Director of Student Affairs, provides confidential consultations with students regarding needs. His office is located in Kresge, Room G20. His telephone number is 617-432-1542 and his email is [aeisenma@hsph.harvard.edu](mailto:aeisenma@hsph.harvard.edu). Please review the official HSPH policy for more information at: [www.hsph.harvard.edu/administrative-offices/registrar/files/handbook.pdf](http://www.hsph.harvard.edu/administrative-offices/registrar/files/handbook.pdf).

## ID CARDS

Main Office (Cambridge): 617-495-3322  
Longwood Area: 617-432-0389  
<http://www.huid.harvard.edu>

Post-doctoral fellows previously students at Harvard and other academic annual appointments will receive their renewals via interoffice mail to their new office addresses.

A Harvard ID Application must be completed for new fellows and employees. The application can be obtained at the EOME Main Office (SPH-1, Room 1402) or the HSPH ID Office.

The HSPH I.D. Office is located in SPH-3, past the elevators near the Kresge entrance. This is where the photograph is taken for the I.D. The office is open Monday through Friday, 8:00am – 4:00pm.

## LIBRARIES/ ON-LINE LIBRARY ACCESS

*The Countway Library of Medicine* – the library needs of the School are served primarily by the Francis A. Countway Library of Medicine, the largest academic medical library in this country. The Countway offers faculty, students, clinicians, researchers, and scholars a collection of some 630,000 volumes of books and journals, some 2,000 electronic journals, a myriad of databases and other electronic resources, complimented by a superb rare books collection.

The Rare Books and Special Collections Department holds the archives of the Harvard Schools of Medicine, Dental Medicine, and Public Health, an extensive manuscript collection as well as prints, photographs, and the Warren Anatomical Museum.

Online resources are available through the Countway Library's Digital Library (<http://www.countway.harvard.edu>) or through the Harvard Libraries Portal (<http://lib.harvard.edu>). Because electronic resources such as journals, books, and databases, are licensed by the Harvard University Libraries for use by current faculty, students, and staff only, individuals must hold a valid Harvard University ID in order to access the online resources. Online system users must also obtain a Harvard University PIN (<http://www.pin.harvard.edu>) or an eCommons username and password (<http://eccommons.med.harvard.edu>).

Harvard's book, journal, and other resource holdings are listed in the HOLLIS catalog (<http://holliscatalog.harvard.edu>). HSPH students may borrow from the Harvard College Library, including Widener and others in Cambridge and also from the libraries of other Harvard schools. It is important to consult each library for hours and access restrictions. Items such as books or journal articles not held at the Countway Library may be requested through interlibrary loan (CountwayDoc), available through the Countway Website.

**Hours:** 8:00am–11:00pm Monday through Thursday; 8:00am–8:00pm Friday; 12pm–7:00pm Saturday; and 12pm–11:00 pm Sunday.

**Circulation:** Books four weeks with renewal five times. Reserve books are used in-house for two-hour periods with renewals. Journals do not circulate.



For current information regarding the Library, please visit the Countway's Website at <http://www.countway.harvard.edu/> or call 617-432-2136 (access) or 617-432-4888 (hours).

## MAIL

In addition to the student mailboxes on the ground floor of the Kresge Building, Environmental and Occupational Medicine and Epidemiology Program (EOME) students have mailboxes within the Program outside Room 1402 of Building I. Please check both regularly. We cannot forward mail from the 14<sup>th</sup> floor. EOME Residents with offices at Landmark Center will receive mail there. For all ERC students who applied via other programs within the Department of Environmental Health, your mailboxes should be provided through your respective programs. Please check with Linda Fox, EER Program Administrator, and Carla Silva, MIPS Program Administrator for location info.

## OFFICES

The Center's administrative office is located in Room 1402 of Building I. Most occupational health faculty offices are located on the 14<sup>th</sup> floor. The offices for industrial hygiene faculty are in the Landmark Building. The offices for first and second year residents are located at the Landmark Building, 3<sup>rd</sup> Floor East. The office for the Director of the Occupational Medicine Residency is Main Campus, 14<sup>th</sup> Floor, Room 1407, and for the Director of the Outreach Program-Building I-1415. Limited office space is available for research fellows, doctoral students, residents, and master's students conducting research projects.

## EOME POLICY ON MOONLIGHTING (OEM RESIDENTS)

HSPH Occupational and Environmental Residency (OEMR) has physicians with a variety of clinical skills and board certifications. Some of the OEMR residents/fellows will want to moonlight in their clinical specialty area. OEMR residency does not prohibit residents/fellows from moonlighting that they have arranged for independently, under their personal full Massachusetts Medical License and medical malpractice insurance. This "moonlighting" experience would be considered completely independent from the OEMR program at HSPH. The only guidance the faculty would offer to residents/fellows who commit to moonlighting is to give careful consideration to timing and workload, so as not to interfere with schoolwork and responsibilities.

If you are a second year resident/fellow, you will be doing clinical practicum OEMR rotations under a CRICO malpractice policy that has been purchased by HSPH. This policy covers your clinical work ONLY at the HSPH practicum sites to which you have been assigned, and would not cover your doing clinical work at any other location. Although in some hospital-based fellowships/residencies it may be possible for residents/fellows to apply for expanded coverage schedule in order to moonlight, this is not an option that OEMR can offer to its residents/fellows.

In rare situations, for fellows who have already attained considerable clinical skills in occupational and environmental medicine, and those who hold a full license in Massachusetts, there may be an opportunity to do a small amount of "moonlighting" in Occupational and Environmental Medicine at

a HSPH practicum site in which the resident has already successfully completed a rotation. A proposal for this moonlighting must be reviewed and approved by the Residency Director. Note: Moonlighting is not permitted with a limited license.

## POST-DOCTORAL RESEARCH FELLOWS

<http://www.hsph.harvard.edu/academicaffairs/postdocs.htm>

ERC awardees are considered stipendee research fellows with benefits. The OEM 2<sup>nd</sup>-year residents are considered stipendee research fellows without benefits except the Harvard Affiliate Health Insurance.

## SAFETY

For your safety in the Longwood Medical Area and the city of Boston, walk with friends via main thoroughfares and in well-lit areas. Watch what's happening around you, stand tall, and walk confidently. Don't wear expensive jewelry. Be cognizant of and alert to your surroundings. When walking after dark, travel in groups of two or more; do not travel alone. Carry your purse close to your body. Don't pat your clothing to make sure your valuables are still where you placed them. Don't ride in the last car of the subway (farthest from the conductor), especially at night. Abide by common sense; if something looks suspicious, avoid and report it.

## SEMINARS

All research fellows and degree candidates at the Harvard ERC are expected to attend the Monday seminars in occupational safety and health series on a regular basis. Research fellows, doctoral candidates, residents in occupational and environmental medicine, and second-year master's students are expected to attend the occupational safety and health research seminar series that alternates with Grand Rounds on Fridays.

All first year residents in Occupational and Environmental Medicine are expected to attend Monday ERC Seminars. All residents regardless of year are expected to attend Grand Rounds and Research Seminars on Fridays.

## SHUTTLE BUS

The Landmark/Longwood shuttle provides service between Landmark Center and Harvard School of Public Health Monday through Friday from 9:00am-5:00pm. No weekend or Holiday service. For more route information, see web site at [http://www.masco.org/transit/ptsLandmark\\_Longwood.htm](http://www.masco.org/transit/ptsLandmark_Longwood.htm).

The M2 shuttle bus service is available from the Longwood Medical Area to Harvard Yard in Cambridge. The shuttle departs from Vanderbilt Hall. The shuttle from Harvard Square to Vanderbilt Hall will stop at the Fenway T Station. Shuttle stops may be requested at other MBTA stops on route as well. MASCO will print revised schedules and post signs in shuttles.

This service is free for students carrying their University photo ID. Buses leave the Medical Campus and Cambridge every 10-15 minutes during peak periods, and at least once an hour during the rest of the day, from approximately 7:00am-11:30pm. The shuttle service will begin Saturday service on

September 5. There is no service on holidays and Sundays. For more information call the MASCO Customer Service Line at 617-632-2310 or visit the web site: <http://www.masco.org/transit/ptsM2.htm>.

## **SUPPLIES AND SERVICES PURCHASED**

Supplies and services purchased are not reimbursed by the Center for students. However, research fellows, doctoral students, residents, and master's students conducting research may be able to use ERC funds or other sponsored research funds to procure what is needed. Please consult with your advisor.

## **TEACHING ASSISTANTS**

Doctoral students are asked to serve as teaching assistants in one academic course, and are paid for doing so. Usually the following courses require assistants: EH 231(Spring), EH 232(Spring), EH 236(Fall), and ID 215(Spring). The primary purpose of this requirement is to develop teaching skills and to work with faculty members in teaching as well as in conducting research. Doctoral students may serve as teaching assistants in more than one course, conditional on satisfactory progress in the doctoral program, needs of the faculty, and availability of funds.

## **TELEPHONES**

Telephone message service is not available to students through the Center's office. Emergency calls are forwarded to the Registrar. Personnel in training status assigned office space may have access to a telephone. Pay telephones are available in the Kresge Building near the stairway and by the elevators and in the foyer of the auditoria on the ground floor.

As part of the Harvard University Emergency Management Plan, the Harvard community can now expect to receive text message alerts in addition to traditional methods of notification. Harvard community members are encouraged to sign-up for this text messaging service in order to facilitate rapid and effective communication throughout the community. A valid Harvard University ID and PIN, or an eCommons ID, is required for access to this service.

Please see the Human Resources internet site for more information: <https://messageme.harvard.edu/>.

## **TRAVEL**

Prior to traveling on University business, individuals unfamiliar with University travel policies should request information from John Yong 617-432-2219.

## **WALKING ESCORT SERVICE**

The Harvard Longwood Campus has a walking escort service available 24 hours a day. On request, the security officer will escort faculty, staff, or students to any of the Longwood Campus Area parking lots, buildings, or local "T" stops. To use this service, call 617-432-1379. Please call ahead as it may take as long as fifteen minutes for your escort to arrive. Please wait for your escort once you have called.