

The Johns Hopkins Bloomberg School of Public Health

The Johns Hopkins Bloomberg School of Public Health is dedicated to the education of research scientists and public health professionals, a process inseparably linked to the discovery and application of new knowledge; and through these activities, to the improvement of health and prevention of disease and disability around the world.

Calendar

SUMMER TERM	
SUMMER INSTITUTES	Begin week of May 17
Internet-Based/Part-time MPH New Student Orientation	Sat Jun 5–Sun Jun 6
REGULAR SUMMER TERM	M July 9–F Aug 27 (36 class days)
NEW STUDENT ORIENTATION/REGISTRATION	W July 7 & Th July 8
Instruction Begins for Summer Term	F July 9
Add/Drop Period	Varies per course schedule
1st Term Registration Ends for Continuing Students	W Aug 25
Last Class Day of Summer Term	F Aug 27
1ST TERM Th Sept 2 - F Oct 27 (39 class days, M–F)	
NEW STUDENT ORIENTATION/REGISTRATION	M Aug 30 & Th Aug 31 & W Sept 1
Instruction Begins for 1st Term	Th Sept 2
Add/Drop Period	Th Sept 2 –W Sept 15
LABOR DAY RECESS	M Sept 6
2nd Term Registration Ends	F Oct 22
Last Class Day of 1st Term	W Oct 27
2ND TERM Th Oct 28–W Dec 22 (38 class days, M–F)	
Instruction Begins for 2nd Term	Th Oct 28
Add/Drop Period	Th Oct 28–W Nov 10
THANKSGIVING RECESS	Th Nov 25–Sun Nov 28
REGISTRATION Begins for 3rd & 4th Terms	T Nov 30
Last Class Day of 2nd Term	W Dec 22
Internet-Based/Part-time MPH New Student Orientation	Sat Jan 8–Sun Jan 9
WINTER INTERSESSION M Jan 10–F Jan 21 (no classes Monday, January 17, 2005)	
MARTIN LUTHER KING'S BIRTHDAY RECESS	M Jan 17
3rd Term Registration Ends	T Jan 18
3RD TERM M Jan 24–F Mar 18 (40 class days, M–F)	
Instruction Begins for 3rd Term	M Jan 24
Add/Drop Period	M Jan 24–F Feb 4
Last Class Day of 3rd Term	F Mar 18
SPRING RECESS	M Mar 21–F Mar 25
4th Term Registration Ends	T Mar 22
4TH TERM M Mar 28–F May 20 (40 class days, M–F)	
Instruction Begins for 4th Term	M Mar 28
Add/Drop Period	M Mar 28–F April 8
Last Class Day of 4th Term	F May 20
PUBLIC HEALTH CONVOCATION	W May 25
UNIVERSITY COMMENCEMENT	Th May 26
RESIDENCY PROGRAM ENDS	Th June 30

Students attending courses in the Greater Washington, D.C., area should visit the School's website at <http://www.jhspH.edu>.

Special Students Limited may register during any of the open registration periods; tuition payment from special students limited is due at the time of registration.

The University

HISTORICAL BACKGROUND

The Johns Hopkins University

The Johns Hopkins University was incorporated in 1867 under the terms of a \$7 million bequest from Johns Hopkins, a Quaker merchant of Baltimore, who directed that the funds be used for the establishment of a university and a hospital. Instruction in the University began in 1876, three years after his death.

The historic role of the University was clearly defined by the first president, Daniel Coit Gilman, in his inaugural address: “The university is a place for the advanced special education of youth who have been prepared for its freedom by the discipline of a lower school. Its form varies in different countries. ... But while forms and methods vary, the freedom to investigate, the obligation to teach, and the careful bestowal of academic honors are always understood to be among the university functions. The pupils are supposed to be wise enough to select and mature enough to follow the courses they pursue.”

The Johns Hopkins University was to be different from the traditional American college. In his inaugural address, President Gilman laid down certain points about which he felt there was general agreement.

He branded as “useless” the dispute between the old or literary education and the new scientific education. He spoke of the value of remote utility in contrast to immediate advantage: “Those ventures are not always most sagacious that expect a return on the morrow. It sometimes pays to send our argosies across the seas; to make investments with an eye to slow but sure returns. So is it always in the promotion of science.”

In discussing curriculum, Gilman recognized the fact that university trustees and administrators must select the branches of learning that are to be encouraged, since one university cannot possibly encourage all. The criterion should be the “requirements and deficiencies of a given people, in a given period,” not “an absolute standard of preference.” Students should be free of routine; investigators should be “free, competent, and willing”; research and teaching should supplement one another.

“The object of the University,” said Gilman, “is to develop character. It misses its aim if it produces learned pedants, or simple artisans, or cunning sophists, or pretentious practitioners. Its purport is not so much to impart knowledge to the pupils, as to

whet the appetite, exhibit methods, develop powers, strengthen judgment, and invigorate the intellectual and moral forces. It should prepare for the service of society a class of students who will be wise, thoughtful, progressive guides in whatever department of work or thought they may be engaged.”

The School

The Johns Hopkins Bloomberg School of Public Health is the oldest school of public health in the world. When it was established in 1916, the School’s founders originally designated their new institution “the School of Hygiene and Public Health,” to pay homage to two honored European traditions of the day. *Hygiene* was included in the name to emphasize the founders’ devotion to basic research and the uncovering of new knowledge about disease and its prevention—in that era, *hygiene* was used by the finest German universities to mean rigorous laboratory investigations into the biological nature of health and disease. Similarly, by including *public health* in the School’s name, the founders were paying tribute to another European tradition, this time from England, a nation admired for its skillful design of practical programs to improve the overall health of populations.

By 2001, when the School’s name was officially changed to the Johns Hopkins Bloomberg School of Public Health, *hygiene* was dropped from the name because this word had lost its hard-science connotations over the intervening 85 years, becoming a mere synonym of *sanitation*. In spite of these changes in the institution’s name, however, the School of Public Health continues to honor its dual commitment to both research and practice, and to providing the highest quality education in public health and the sciences basic to it.

Moreover, the School’s close proximity to Washington, D.C., and to the national executive and legislative branches of government, give students the opportunity to gain first-hand understanding of how public health policy is made. Opportunities also exist for observing and interacting with state and local health agencies.

PRESENT PERSPECTIVES

University Divisions

Within the University and Hospital there is increasing emphasis on interdivisional and inter-institutional cooperation in education and research programs. The School of Public Health offers an unusually rich environment in the health sciences, in part because of its

close proximity to and cooperative relationships with the other divisions of the University.

The other divisions include Johns Hopkins Medicine, the School of Nursing, and the William H. Welch Medical Library, all located in East Baltimore; the Zanvyl Krieger School of Arts and Sciences, the School of Professional Studies in Business and Education, and the Whiting School of Engineering, all on the nearby Homewood campus; the Paul S. Nitze School of Advanced International Studies in Washington, D.C.; the Applied Physics Laboratory in Laurel, Md.; and the Peabody Institute in Baltimore.

The School of Public Health

The School provides opportunities for graduate education, research, professional practice, and service in diverse fields, including the primary intellectual disciplines of public health; quantitative sciences such as biostatistics, epidemiology, and demography; basic and applied research; social policy; planning, management, and evaluation of the delivery of health services; and the environmental health sciences. These programs are designed for individuals from a wide variety of professional and academic backgrounds and experience in health.

The School is organized into the following departments: Biochemistry and Molecular Biology; Biostatistics; Environmental Health Sciences; Epidemiology; Health Policy and Management; International Health; Mental Health; Molecular Microbiology and Immunology; and Population and Family Health Sciences.

Within the broad concepts of health protection and disease prevention, specialized academic interests include quantitative and analytic methodologies, health policy, health finance and management, outcomes assessment, chronic diseases, injury and violence prevention, substance abuse, epidemiologic patterns of risk factors, health promotion and practice, health behavior and communications, human genetics, infectious diseases, vector biology, infant and women's health, health problems in the developing world, nutrition, interactions between behavior and health, reproductive health and family planning, environmental health engineering and chemistry, physiology, toxicology, occupational safety and health, radiation health sciences, and molecular biology.

The School offers core courses at the University's Montgomery County Campus. More information is provided in the Continuing Professional Education chapter of this catalog.

The School also has cooperative relationships with its East Baltimore community, and with both private

and public organizations at the local, state, national, and international levels, including academic, governmental, and service organizations, all of which enhance the breadth and depth of the School's curriculum.

Johns Hopkins Medicine

Johns Hopkins Medicine is the name of the governance structure for the Hospital/Health System and the Johns Hopkins University School of Medicine. The Chief Executive Officer for Johns Hopkins Medicine and Dean of the Medical Faculty oversees the organization.

The Johns Hopkins Hospital is a separate corporation and has an endowment independent of the University, but the relations between the Hospital and the School of Medicine are close, in accordance with the wish of their founder. The head of each clinical department of the hospital is also the professor and director of the corresponding academic department of the School of Medicine.

The School of Medicine is organized into preclinical and clinical departments. The preclinical departments are Biological Chemistry; Biomedical Engineering; Biophysics and Biophysical Chemistry; Cell Biology; Comparative Medicine; the History of Medicine; Molecular Biology and Genetics; Neuroscience; Pharmacology and Molecular Sciences; and Physiology. The clinical departments are Anesthesiology and Critical Care Medicine; Dermatology; Emergency Medicine; Medicine; Neurology; Neurosurgery; Obstetrics and Gynecology; Oncology; Ophthalmology; Orthopedic Surgery; Otolaryngology–Head and Neck Surgery; Pathology; Pediatrics; Physical Medicine and Rehabilitation; Psychiatry; Radiology; Surgery; and Urology.

Objectives of the School's curriculum include integrating basic science and clinical experiences, expanded use of case-based small group learning sessions, and early experience with community-based practice.

The School of Nursing

The School of Nursing has been an academic division of the University since 1984, offering both upper-division undergraduate and graduate curricula. Hopkins Nursing has a historic legacy that dates back to 1889 when it was founded as a diploma school of the Johns Hopkins Hospital. The School established the foundation for a national model in nursing education in the 1890s with Hopkins leaders later founding the National League for Nursing and the American Nurses' Association.

The School's mission is to improve health care by educating nurses who will set the highest standards for patient care, exemplify scholarship, be sensitive to changing societal needs for nursing care, and provide a positive and innovative force in the evolution of the nursing profession and the health care system.

The Homewood Campus

The Homewood campus facilities of the University, where the undergraduate and other graduate programs are located, are available to School of Public Health students. These facilities include the Zanyvl Krieger School of Arts and Sciences, the Whiting School of Engineering, and the School of Professional Studies in Business and Education. Cooperation between the various divisions of the University makes many of the courses, lectures, and other opportunities available to all students of the University.

The Paul S. Nitze School of Advanced International Studies

The School, located in Washington, D.C., provides advanced professional education in the field of international service, as well as scholarly research relevant to the problems of the United States and its public and private institutions in their relations with the governments and institutions of other countries.

The Peabody Institute

The Institute is recognized as one of the leading professional schools of music in the country.

The Applied Physics Laboratory

The Applied Physics Laboratory conducts research and development primarily for national security, and for non-defense projects of national and global significance. Areas of non-defense research include biomedicine, transportation, and educational computer applications.

Academic Resources

LIBRARY FACILITIES

The William H. Welch Medical Library

The William H. Welch Medical Library provides the Johns Hopkins Medical Institutions (School of Medicine, the Johns Hopkins Bloomberg School of Public Health, Johns Hopkins School of Nursing, Johns Hopkins Hospital, Kennedy-Krieger Institute) and its affiliates with information services that advance research, teaching, and patient care.

By registering as library users, faculty, staff, and students can search a range of databases, and take advantage of the library's information services and classes. The Welch Web (www.welch.jhu.edu) provides users with Internet access to databases in many disciplines, and a collection of online full-text journals. Online resources are available 24 hours per day from any location.

The library's education program is designed around tools and technologies for biomedical communication. Classes are offered on basic computing applications, computer networking, electronic mail communication, searching online databases, and scientific writing. Microcomputers and selected software are available for use in the library.

The library also offers a liaison service to faculty, staff, and students (www.welch.jhu.edu/liaison/). The library owns over 400,000 books and journal volumes, and subscribes to over 3,000 online journals. Interlibrary loan and document delivery services are available online through WelDoc (www.welch.jhu.edu/services/ill.html). Photocopy machines are located at all Welch service sites.

Other service sites in the Welch system are the Adolf Meyer Library, with a focus on neuroscience and psychiatry, and the Nursing Information Resource Center. A special library of historical materials, administered by the Department of the History of Medicine, Science and Technology, is located on the third floor of the Welch building.

The Abraham M. Lilienfeld Library

The Lilienfeld Library is the primary resource within the School for information in the fields of public health, management science, and the social sciences. Located on the ninth floor of the Hampton House building, the library provides Access to online and print information in all areas of interest to the

School's students and faculty. In fall 2004, the Population Center print collection will become the online Population Digital Collection. A new service center called a touchdown suite on the fourth floor will replace the second floor satellite facility in the Wolfe Street building. The total library print collection is approximately 30,000 volumes of books, pamphlets, and government reports. The library currently receives approximately 254 print periodicals many of which are also available online through WelchWeb. In addition to the Lilienfeld Library, the departments of Biochemistry, Biostatistics, and Molecular Microbiology and Immunology maintain reading rooms that house specialized collections.

The Sheridan Libraries

The Sheridan Libraries encompass the Milton S. Eisenhower Library and its collections at the John Work Garrett Library, the Albert D. Hutzler Reading Room, and the George Peabody Library.

Located on the Homewood Campus, the Eisenhower Library is Hopkins' main research library and a University-wide resource supplementing the libraries on other campuses.

The Libraries' materials and services reflect the development and increasing diversification of resources used for research and scholarship. Of particular interest for the Johns Hopkins Bloomberg School of Public Health students are the collections in the social, physical, and life sciences. In addition to traditional collections distinguished by their breadth and depth, the Eisenhower Library offers an expansive collection of electronic information resources. These include over 7,000 full-text journals, full-text and image files, extensive abstracting and indexing sources, and statistical, cartographic, and full text publications from the U.S. government.

A highly qualified, service-oriented staff is available to assist users in making full use of the library's resources. For more information about the library's resources and services, consult the libraries' website at <http://www.library.jhu.edu>.

The Eisenhower Library's collection includes over 2.6 million printed volumes, over 21,000 serial subscriptions, 4 million microforms, over 200,000 maps, and numerous audio-visual, manuscript, and archival resources. Rare books, archives, and sheet music are located in Eisenhower's Special Collections Department. Other special collections locations include the Garrett Library at Evergreen House (4545 N. Charles St.) and the George Peabody Library (17 East Mt. Vernon Place).

The Johns Hopkins Bloomberg School of Public Health faculty, students, and staff are eligible for access to the Eisenhower library upon presentation of a valid Johns Hopkins Bloomberg School of Public Health ID card. Borrowing privileges require a Welch Library card.

The library's regular hours are from 8 a.m. to midnight Monday through Thursday; 8 a.m. to 10 p.m. Friday and Saturday and 10 a.m. to midnight on Sunday. Consult the libraries' website for extended, holiday, and summer hours. For hours of the three Special Collections locations, please call 410-516-8348.

INFORMATION SYSTEMS

The Department of Information Systems serves as the central computing resource for the School of Public Health. The department provides computer hardware, software, and support services for public health instruction, research computing, and administrative use. The department provides email, calendar, and other web applications through a secure portal, my.jhsph.edu. The primary server platforms is Microsoft Windows. All desktop computers are connected to a 10MB switched Ethernet network. All the systems are connected to the Internet. Access to these facilities is provided at three computer labs. These facilities are available 24 hours per day, seven days per week. A wireless network is also available for use with laptops and other smaller computer devices. For the most current information, please visit the School's website at my.jhsph.edu.

JOHNS HOPKINS ENTERPRISE DIRECTORY (JHED)

JHED is the University's web directory (<http://jhed.jhu.edu>). All faculty, staff, and students are included in the directory; however, individuals have the ability to determine which data elements may be accessible on both the Intranet and Internet levels. Students are encouraged to make their address, phone number, email, and photo available on the Intranet view. Members of the Hopkins community are granted secure access to the directory via their login IDs (LID) and passwords. Students' LIDs and passwords also provide access to WEB Services (<https://jhed.johnshopkins.edu/>). All JHU students may use this service to provide current and complete address information, including email addresses. Students are also encouraged to check their registration and grades via WEB Services.

Questions regarding access to JHED should be directed to JHED Support at 410-516-HELP.

Academic Information

REQUIREMENTS FOR ADMISSION AND DEGREE CANDIDACY

The Johns Hopkins Bloomberg School of Public Health offers opportunities for graduate and post-graduate study to degree candidates and special students (those who are not in a degree program; refer to Administrative Regulations chapter for more information) with varied interests and backgrounds.

The School welcomes applications from qualified individuals regardless of race, color, sex, religion, sexual orientation, national or ethnic origin, age, disability, or veteran status. For further information regarding the University Nondiscriminatory Policy, see the chapter, Administrative Regulations. The School reserves the right to limit the number of students admitted to any program and to dismiss any student whose work is deemed unsatisfactory for any reason.

ADMISSIONS PROCEDURES

Application for admission to any of the School's programs or Departments is made online at www.jhsph.edu or on standard forms located both online (in downloadable format) and within the Application Materials, which may be obtained by contacting the Admissions Office, Johns Hopkins Bloomberg School of Public Health, 615 N. Wolfe Street, Suite E1002, Baltimore, MD 21205; phone 410-955-3543; email: admiss@jhsph.edu.

Application Deadlines—Applications are processed in the Admissions Office on a rolling basis; however, some departments and programs do not begin reviewing applications until after October 1. International students are advised to apply early due to the time required to process visa applications. The deadlines listed here refer to a fully completed application, including all required supporting items such as an application fee, transcripts, recommendations, test scores, a current resumé, and a personal statement.

Note: (1) The application deadlines for the full-time MPH program differ from those for the Part-time/Internet-based MPH programs, and (2) applications for postdoctoral fellow may be submitted at any time.

January 2

Department of Population and Family Health Sciences—all programs

January 15

Department of Environmental Health Sciences—doctoral programs
Department of Health Policy and Management—ScM in Genetic Counseling
Department of Molecular Microbiology and Immunology—doctoral programs

February 1

Department of Biochemistry and Molecular Biology—doctoral program
Department of Biostatistics—all programs
Department of Environmental Health Sciences—MHS programs
Department of Health Policy and Management—MHS programs
Department of International Health—all programs
Department of Mental Health—all programs
Department of Molecular Microbiology and Immunology—ScM program
MPH Part-time/Internet-based (June or July start)

April 1

Department of Epidemiology—master's programs
Graduate Training Program in Clinical Investigation—all programs
Department of Molecular Microbiology and Immunology—MHS programs (international applicants)

June 1

Department of Biochemistry and Molecular Biology—master's programs
Department of Molecular Microbiology and Immunology—MHS programs (domestic applicants)

September 1

MPH Part-time/Internet-based (January start)

October 31

Occupational Medicine Residency Program (for physicians only)

December 1

Department of Epidemiology—doctoral programs
Department of Health Policy and Management—doctoral programs
MPH full-time (July start)
General Preventive Medicine Residency Program (for physicians only)
Public Health Ophthalmology Program (not offered every year)

APPLICATION REQUIREMENTS

A completed application consists of an application and supporting forms filled out completely. The application should include:

- 1) A statement of objectives summarizing past education, training, and experience, as well as present interests and future aims
- 2) A resumé or curriculum vitae, and a list of publications, if any, should be included.
- 3) A complete set of official transcripts (including marks sheets and diplomas for international study, where applicable) from each academic institution attended beyond the secondary level.
- 4) Recommendations. Three recommendation forms are provided with the application materials. Applicants should complete the upper portion of these forms and forward them to persons who are acquainted with their professional and/or academic performance.
- 5) A non-refundable application fee of either \$75 (paper version) or \$45 (online version) is required. Students in financial need who are currently enrolled at a U.S. school may have the application fee waived only at the written request of the financial aid officer from their academic institution. Applicants for postdoctoral fellowships are not required to pay an application fee.
- 6) Standardized test scores. All MPH applicants are required to submit scores of the Graduate Record Examination or scores of other graduate admissions tests such as the MCAT or the LSAT (JD/MPH only). Departmental (non-MPH) applicants (master's and doctoral) are required to submit the results of the Graduate Record Examination. Applicants should indicate the Johns Hopkins Bloomberg School of Public Health (code number 5352) as a score recipient.

STUDENT RIGHTS AND RESPONSIBILITIES FOR THE ADMISSIONS PROCESS

An offer of admission will be contingent upon the Admissions Office's receipt of all official and complete required academic records. Students with missing documents may be unable to register after two terms of enrollment.

Federal legislation gives each student who is admitted and who enrolls at the Johns Hopkins Bloomberg School of Public Health a right of access to his/her educational records. This includes the letters of recommendation submitted in the admissions process. An applicant may waive this right, if so desired, by sign-

ing the waiver statement on each recommendation form before sending it to the person from whom a letter of recommendation is being requested. Signing this waiver is not required as a condition for admission to, receipt of financial aid from, or receipt of any other services or benefits from the Johns Hopkins Bloomberg School of Public Health.

Deposits—All accepted degree and regular special student applicants will be required to furnish a non-refundable deposit of \$600. The deposit will be applied toward expenses in the first term of enrollment. In cases where there are deferments, the deposit can be applied to the student account for a maximum two year deferment period. After that time, the deposit will not be refunded nor will it be applied to any subsequent tuition charges.

International Students—Applicants from other countries are subject to the same requirements concerning admission and candidacy as are applicants from the United States. Proficiency in the English language is a requirement for admission to the School.

Applicants from countries where English is not the language of university level instruction will be required to submit the results of the Test of English as a Foreign Language (TOEFL). A score of 600 (250 on the computer-based test) is considered the minimum level of proficiency in English for graduate-level work. Applicants should arrange to take the TOEFL well in advance of applying and should indicate the Johns Hopkins Bloomberg School of Public Health (code number 5352) as a score recipient.

COURSE EVALUATIONS

At the end of each academic term, students are encouraged to participate in a course evaluation process. The questions on the course evaluation form have been carefully crafted to gather information about the quality of the instructor and the course content. The responses are used to recognize excellent instructors and courses, and to identify where improvements can be made. The evaluation results for each course can be accessed by term, through the course evaluation website at

<http://www.jhsph.edu/Crsevals>, or by course, through the course database at

<http://commprojects.jhsph.edu/courses/>. The Associate Dean for Graduate Education and Research meets quarterly with the Student Committee for Course Evaluations. This committee is comprised of student representatives from each academic department and the MPH program. Students interested in serving on this committee should contact the Associate Dean for Graduate Education and Research in W2025.

DEGREE PROGRAMS

Master of Public Health

Ronald Brookmeyer, PhD
Chair of the MPH Program

Associate Chairs

Jacqueline Agnew, MPH, PhD
Marie Diener-West, PhD
Holly Grason, MA
Sukon Kanchanaraksa, PhD
Gary Ketner, PhD
Laura Morlock, PhD, MA
George Rebok, PhD
Andrea Ruff, MD
John Scocca, PhD
Edyth Schoenrich, MD, MPH
Susan Tonascia, ScM
James Yager, PhD

The MPH is a Schoolwide program designed to provide students with a population perspective on health. The program prepares students to become leading public health professionals capable of addressing current global public health problems through multi-disciplinary approaches that apply the latest scientific knowledge.

Please contact the MPH office by phone, 410-955-1291, or email, mphprog@jhsph.edu, with any questions about the program.

MPH Academic Program

The MPH is a flexible program that can be customized to meet a variety of professional and career goals. Students may study on a full-time basis, or on a part-time/Internet-based basis. Full-time and part-time/Internet-based students have the same academic requirements and receive the same degree.

Full-time Study

The full-time option is a concentrated eleven-month course of study at the East Baltimore campus. The program begins with an orientation in July.

Part-time/Internet-based Study

Part-time/Internet-based students complete the degree within three years of matriculation through a combination of online courses, and in-person classes taken either on the East Baltimore campus during regular academic terms, in intensive learning summer and winter institutes, or at other sites where Johns Hopkins Bloomberg School of Public Health courses are offered for credit. Students can earn up to 75% of their academic credits online.

For more information on the MPH Academic program, visit:

www.jhsph.edu/Academics/MPH/current_courses.html

MPH Curriculum

The MPH program provides a balance between a broad-based core curriculum and opportunities to pursue individual interests. The MPH curriculum is grounded in the critical disciplines and competencies of public health which includes the following core courses:

- Environmental Health
- Principles of Epidemiology
- Problem Solving in Public Health
- Tracking the Health of Populations

In addition, students are also required to complete coursework in each of the following areas:

- Biostatistics
- Biological Sciences
- Management/Health Services Sciences
- Social and Behavioral Sciences

Students must also complete the following projects:

MPH Individualized Goals Analysis

(www.jhsph.edu/Academics/MPH/goals.html)

MPH Capstone Project

(www.jhsph.edu/Academics/MPH/capstone.html)

The MPH Individualized Goals Analysis is completed within two terms of matriculation and is an opportunity for students to develop a plan for their MPH program of study that meets their educational and professional goals. The MPH Capstone Project is an opportunity for students to apply the competencies and skills they acquire in the program to a public health problem relevant to their professional goals and interests. Students in the Part-time/Internet-based option should also refer to the list of full-web courses for online options to fulfill the MPH curriculum (visit http://distance.jhsph.edu/courses/full_web.cfm).

For a complete listing of the MPH curriculum, visit www.jhsph.edu/Academics/MPH/prospect_curriculum.html.

Admission Requirements

The minimum requirements for admission to the MPH program include:

1. A baccalaureate-level degree
2. Additional health-related experience beyond the baccalaureate level. This requirement can be satisfied in several ways:
 - a. A minimum of two years full-time post-baccalaureate work experience in a health field or other fields related to public health
 - b. A doctoral degree in a field underlying public health
 - c. Completion of two years of medical school curriculum. This requirement may be waived for applicants to the MPH/MSW, MPH/JD, and MPH/MSN dual degree programs.
3. College-level courses in quantitative sciences, one college-level course in biology, and either a health-related science course or another biology course.
4. Submission of standardized test scores, such as the GRE, MCAT, or LSAT. MPH applicants who have a graduate degree beyond the baccalaureate, or have a medical degree may request the application be reviewed without submission of standardized tests. However, the absence of scores may place the application at a disadvantage in the admission selection process.
5. Applicants from non-English speaking countries must submit official test scores of the Test for English as a Foreign Language (TOEFL). A minimum TOEFL score of 600 on the paper-based or 250 on the computerized test is required for admission into the MPH program.
6. Submission of a statement of purpose that includes career goals and objectives in pursuing the MPH degree, including how the program will help in attaining those goals.

Submission of three references that address the applicants' potential for success in a public health career.

For more detailed Admissions information, visit www.jhsph.edu/Academics/MPH/admissions_MPH.html.

Graduation Requirements

Students should consult the MPH Program Manual for a detailed list of graduation requirements. The manual can be accessed at:

www.jhsph.edu/academics/mph/current_manuals.html.

1. Total of 80 units required for graduation
2. At least 60 units in formal School of Public Health coursework that is not special studies
3. Students must maintain a grade "C" or better in all required MPH core courses and courses that meet concentration area requirements
4. Complete the MPH Goals Analysis
5. Complete the MPH Capstone project
6. Internet-based/part-time students must complete at least 20 units of coursework in a face-to-face format; not special studies
7. Maintain minimum academic standards as described in the MPH Student Program Manual. Failure to maintain minimum standards is grounds for dismissal from the program.
8. Complete the School's Academic Ethics module.

MPH Customized Programs and Concentration Areas

Full-time MPH students may either elect an optional concentration area or customize their program of study. Regardless of whether a student elects a concentration or customizes the program of study, all students must complete the MPH core course requirements, the MPH Individualized Goals Analysis, and MPH Capstone Project. Students electing a concentration must complete a number of required course units as specified by the concentration area over and above the MPH core course requirements. Alternately, students may choose to customize their program of study instead of completing a concentration. Students who customize their program of study complete the core MPH requirements and then choose elective courses for the remaining units in consultation with their faculty advisors.

Part-time/Internet-based MPH students participating through a predominantly off-campus format will not be able to elect a concentration, but can use the concentrations as a guideline to customize the curriculum for specialization in a particular area of public health.

MPH Concentrations

CHILD HEALTH (for full description, visit www.jhsph.edu/academics/mph/child%20health.html)

The MPH concentration in Child Health focuses on understanding the health problems and health status of children across the globe, the nature and scope of the multiple determinants of children's health status, and the range of public health programs to address the health and wellbeing of children and their families, in developed and developing countries. The goals of the concentration are to provide students with an understanding in several critical areas including:

1. The underlying determinants of children's health status in developing and developed countries, including socio-economic, demographic, developmental, behavioral, cultural, political, environmental, and other determinants
2. The content of specific health problems of children, including nutritional issues, injury, infectious diseases and HIV, chronic and disabling conditions, adolescent health concerns, and others
3. The design, development, implementation, and evaluation of public health programs to improve the health and well-being of children, including immunization programs, child survival strategies, primary health care, health promotion and disease prevention efforts, and injury prevention

Faculty Concentration Directors: Andrea Ruff, MD, Associate Research Professor, International Health; Bernard Guyer, MD, MPH, Professor, Population and Family Health Sciences

ENVIRONMENTAL AND OCCUPATIONAL HEALTH (www.jhsph.edu/academics/mph/enviro%20occ%20health.html)

The MPH concentration in Environmental and Occupational Health provides a comprehensive introduction to environmental and occupational health. These two highly related fields represent a multi-disciplinary approach to the assessment and control of factors in our personal and professional environments that adversely affect human health. The concentration is designed to provide students with basic competencies and skills in:

1. Chemical, biological, and physical agents and the media in which they distribute in our local, regional, and global environments, as well as psychosocial factors
2. The basic biological mechanisms by which environmental and occupational agents are transferred to,

- distributed within, and adversely affect our bodies
3. Factors associated with susceptibility to exposure
4. Environmental risk assessment
5. Identification of intervention strategies to reduce exposures and adverse effects
6. Global environmental changes that may ultimately produce significant indirect effects

Faculty Concentration Directors: Jonathan Links, PhD, Professor, Environmental Health Sciences; Jackie Agnew, PhD, Professor, Environmental Health Sciences

EPIDEMIOLOGICAL AND BIostatistical METHODS FOR PUBLIC HEALTH AND CLINICAL RESEARCH (www.jhsph.edu/academics/mph/epi%20biost%20methods.html)

The MPH concentration in Epidemiological and Biostatistical Methods for Public Health and Clinical Research is designed for students with quantitative backgrounds who are seeking to gain additional skills in epidemiologic study design and statistical data analysis. The goal of this concentration is to prepare students to participate in the design, conduct and analysis of research studies in public health and put concepts into practice. This concentration is best suited for students who have already worked in a particular substantive area and have identified specific research questions.

The competencies gained from this concentration include:

1. Articulating an appropriate question/hypothesis
2. Identifying an appropriate study design and data set for answering the question
3. Obtaining IRB approval
4. Gaining familiarity with aspects of data management
5. Identifying and applying appropriate statistical methods and correctly interpreting results
6. Gaining familiarity with tracking and recording steps in the analysis of a data set
7. Writing up the results of a data analysis for a professional publication
8. Oral presentation of the results

Faculty Concentration Directors: Rosa Crum, MD, Associate Professor, Epidemiology; Marie Diener-West, PhD, Professor, Biostatistics

HEALTH LEADERSHIP AND MANAGEMENT (www.jhsph.edu/Academics/MPH/Management%20in%20Public%20Health.html)

The MPH concentration in Health Leadership and Management provides students with an understanding

of the issues and challenges of leading and managing health service organizations. The concentration is aimed at practitioners whose responsibilities require them to have leadership skills and an understanding of management, but who neither require nor want a full management degree. Students gain a fundamental understanding of the management of health service organizations in a range of settings in both the United States and other countries (especially low- and middle income countries), covering the following topics:

1. The healthcare environment
2. Leadership development, including building a shared mission and vision
3. Organizational design
4. Strategic positioning and planning
5. Organizational stakeholders and governance
6. Human resources
7. Managing conflict
8. Quantitative tools for management
9. Budgeting and financial management
10. Approaches to process improvement, including continuous quality improvement
11. Measuring and monitoring organizational performance
12. Change management and transformational leadership

Through a variety of teaching methods (lectures, laboratories, group work, seminars, case methods, individual assignments), and application of the Hopkins leadership and management paradigm, students will be able to demonstrate the skills and attributes to function effectively in a healthcare organization.

Faculty Concentration Directors: David Peters, MD, MPH, DrPH, Assistant Professor, International Health; William Ward, Jr, MBA, Associate Public Health Professor, Health Policy and Management

HEALTH POLICY AND FINANCING

(www.jhsph.edu/academics/mp/health%20policy%20financing.html)

The MPH concentration in Health Policy and Financing develops skills and knowledge related to analysis and decision-making for health systems' organization, financing, and service delivery—in the United States and internationally. The curriculum focuses on health policy analysis and formulation; financing, organization, and oversight of health systems; and policies and programs for disease prevention, injury control, and other public health priorities. This concentration area is aimed at developing skills, knowledge, and attributes for policymakers, policy

analysts, and senior managers of health systems. The concentration emphasizes planning and managing national and international programs, institution building, teaching, and research in these areas. Students acquire a solid foundation in policy analysis, an understanding of key health policy issues, and substantive knowledge of health care systems and public policies and programs in the U.S. and in selected low-, middle-, and high-income countries. The required curriculum provides students with a sound knowledge of the processes through which public policy decisions are made; training in basic quantitative and analytic methods; and the skills needed to use and critique data, research findings, and program evaluations in the development of health policy. The curriculum provides an overview of changes occurring in the U.S. and internationally in health sector policy and financing—comparing countries at different levels of income and with varying health system infrastructures. Topics include the role of government in the health sector, sources of revenue for the health sector, health insurance systems, provider organization and payment methods, and access to health care.

Faculty Concentration Directors: Tom Oliver, PhD, Associate Professor, Health Policy and Management; Hugh Waters, PhD, Assistant Professor, International Health

HUMANITARIAN ASSISTANCE: HEALTH AND HUMAN RIGHTS

(www.jhsph.edu/academics/mp/health%20policy%20financing.html)

The MPH concentration in Humanitarian Assistance: Health and Human Rights is concerned with protection and advocacy for vulnerable populations worldwide. These include refugees and at-risk domestic populations. The coursework helps students understand why populations become vulnerable and the health needs of these populations. Advocacy and protection of rights for populations and individuals is stressed. Students gain expertise in methods to provide assistance to refugees and displaced populations and other vulnerable groups. Students interested in disaster management gain expertise in disaster preparedness, management, and mitigation. A variety of methods are used to teach students basic skills including

1. Documenting human rights
2. Protection and advocacy for the vulnerable
3. Control of epidemic diseases among displaced populations
4. Methods of measurement in disasters
5. Disaster planning

6. Planning feeding programs for displaced populations
7. Implementing and monitoring assistance programs

Students gain understanding in identifying vulnerable populations; public health care for refugees and displaced persons; basic human rights principles; human rights law, conventions, declarations, and agreements; causes and mitigation of natural disasters; environmental health issues in displaced populations; and human rights impact assessment of policies and interventions.

Faculty Concentration Directors: Gilbert M. Burnham, MD, Associate Professor, International Health; Robert Lawrence, Associate Dean for Professional Education and Programs and Professor, Health Policy and Management

INFECTIOUS DISEASES

(www.jhsph.edu/academics/mph/infectious%20diseases.html)

The MPH concentration in Infectious Diseases provides students with competencies in multiple disciplines including epidemiology, immunology, microbiology, parasitology, and vector-borne diseases to address critical problems in the control and prevention of infectious diseases. Students who complete the concentration gain special expertise in the pathogenesis, epidemiology, and control of infectious diseases appropriate for careers within state health departments, federal agencies conducting research, and the pharmaceutical industry. Students are exposed to the fundamental concepts underlying the epidemiology and control of a number of infectious diseases affecting global health.

Faculty Concentration Directors: Clive Shiff, PhD, Associate Professor, Molecular Microbiology and Immunology; Ken Nelson, MD, Professor, Epidemiology; Neal Halsey, MD, Professor, International Health

PUBLIC HEALTH NUTRITION

(<http://www.jhsph.edu/Academics/MPH/PHNutrition.html>)

The MPH concentration in Public Health Nutrition provides students with an opportunity to focus their study on nutrition, and integrate this information with other coursework in order to develop the skills to address nutrition problems in the United States and around the world.

Students choosing this concentration will gain an understanding of:

1. The major nutritional problems of public health importance
2. The methods for assessing nutritional status, and the use and interpretation of nutritional indicators

3. The methods for establishing the causal role of nutritional factors on health and disease status
4. The design and implementation of nutrition programs to improve the nutrition and health of diverse populations

Faculty Concentration Directors: Laura E. Caulfield, PhD, Associate Professor, Center for Human Nutrition, Department of International Health; Eliseo Guallar, MD, DrPH, Assistant Professor, Department of Epidemiology

PUBLIC HEALTH PREPAREDNESS IN PRACTICE

(www.jhsph.edu/academics/mph/public%20health%20preparedness.html)

The MPH concentration in Public Health Preparedness in Practice develops the knowledge and skills that are required for the practice of public health and leading national public health preparedness efforts. The course sequence includes courses in tracking the health of populations, assessment of public health risks, public health practice, public health preparedness (including emergency management), and communicating to the public and the media. Critical issues including bioterrorism, disease surveillance, and protecting our food and water are explored. The competencies that are developed, which are based on the Council on Public Health Linkages' framework for the core competencies of public health practice, include:

1. Monitoring health status to identify community health problems
2. Diagnosing and investigating health problems and health hazards in the community
3. Informing, educating, and empowering people about health issues
4. Mobilizing community partnerships to identify and solve health problems
5. Developing policies and plans that support individual and community health efforts
6. Enforcing laws and regulations that protect health and ensure safety
7. Linking people to needed personal health services and assuring the provision of health care when otherwise unavailable
8. Assuring a competent public health and personal health care workforce
9. Evaluating effectiveness, accessibility, and quality of personal and population-based health services
10. Conducting research for new insights and innovative solutions to health problems

Faculty Concentration Directors: Tom Burke, PhD, Professor, Health Policy and Management; Lynn Goldman, MD, Professor, Environmental Health Sciences

SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH

(www.jhsph.edu/academics/mph/social%20behavioral%20sciences.html)

The MPH concentration in Social and Behavioral Sciences in Public Health provides students with competencies in the following areas:

1. Theoretical basis of social and behavioral sciences approach to health and illness. These have implications for both behavioral interventions and understanding psychosocial influences on health and social policies that affect health.
2. Behavior change intervention design and implementation
3. Behavior change program evaluation

Students completing this concentration can focus on skills in designing, implementing, and evaluating programs promoting healthy behaviors in international and/or domestic settings. Students can also focus on analysis of psychological and social influences on health and behavior. They can obtain skills necessary for working with diverse populations on a variety of health topics and in non-profit organizations and government agencies at all levels. Students completing this concentration may be eligible to take the national certifying exam to become a Certified Health Education Specialist.

Faculty Concentration Directors: Andrea Gielen, ScD, Professor, Health Policy and Management; Michael Sweat, PhD, Associate Professor, International Health

WOMEN'S AND REPRODUCTIVE HEALTH

(www.jhsph.edu/academics/mph/womens%20reproductive%20health.html)

The MPH concentration in Women's and Reproductive Health focuses on understanding the health status of women with regard to their general and reproductive health and the health of their newborn, the determinants of their health status, preventive strategies and programs to address their health, and the well being of their newborn. Students may opt to focus on women's health in general, reproductive health, or their health during pregnancy and of their newborn, domestically or in a developing country setting. The goals of the concentration, applicable to both domestic and international issues, include providing students with competencies and understanding in several critical areas including:

1. The scope and magnitude of health problems for women with regard to their health in general or reproductive health, with a focus across the life span, including infectious, chronic, and disabling conditions

2. The determinants of women's and reproductive health, including socio-economic, cultural, behavioral, environmental, political, and other determinants
3. Analytic skills in the core MPH courses, as they are applied to women's and reproductive health, as well as other possible skills, including demographic, evaluative, and epidemiologic methods
4. Design, development, and implementation of public health programs and clinical interventions to improve the reproductive health and well-being of women, including programs related to family planning services, safe motherhood, and health during the reproductive years

Faculty Concentration Directors: Donna Strobino, PhD, Professor, Population and Family Health Sciences; Michele Dreyfuss, PhD, MPH, Assistant Research Professor, Population and Family Health Sciences

Doctor of Public Health

The Doctor of Public Health (DrPH) is an advanced professional degree for those who intend to pursue or advance a professional practice career in public health. The degree is conferred in recognition of the candidate's command of a comprehensive body of technical knowledge in public health and its related disciplines; the ability to initiate, organize, and pursue the investigation of significant problems in public health; and the capacity to formulate policies, strategies, or programs on the basis of the new knowledge generated. The degree leads to a career in high-level administration, teaching, or practice, where advanced analytical and conceptual capabilities are required.

The DrPH program develops in its students all competencies included in the School's MPH program, with increased emphasis on analytical skills in problem-solving and on leadership. Students who enter the DrPH program with an MPH or equivalent from another institution will complete part or all of the core requirements of the Johns Hopkins MPH program as part of their DrPH program.

The DrPH curriculum is determined by the student's interests and needs, the departmental requirements, and the nature of the public health problem to be addressed in the culminating research project. Elements of the curriculum include a set of courses across public health disciplines, including a DrPH seminar series, and a discipline or departmental concentration to impart state-of-the-art tools and skills for advanced practice. A wide range of courses is available to provide training and experience in the design and execution of a project, the analysis and interpretation of the findings and their application to public health

policy and practice, and the preparation of a doctoral dissertation.

Admission—Evaluation for admission is based on the applicant's educational and work experience, past academic performance, and potential to provide leadership in public health. Admission requirements include those requirements for admission to the MPH program, plus the following:

1. A minimum of three years' full-time work experience in health or human services. An appropriate combination of education and work experience may be substituted.
2. Evidence of quantitative or evaluative skills and ability. This may be provided in the form of evidence from previous course work, publications, technical reports, or GRE scores, or a combination of these.
3. Recent scores (<5 years old) of GRE, MCAT, LSAT or other graduate admissions tests. Waivers may be granted under special circumstances.

To be considered for acceptance for the Doctor of Public Health degree, the student must have an MPH degree or equivalent preparation from this or another institution. Equivalent preparation is defined as preparation in the five areas of knowledge deemed basic to public health by the Council on Education for Public Health: biostatistics, epidemiology, environmental health, social and behavioral sciences, and health services administration. If deficiencies in the above background are noted, acceptance conditional upon completing work in these particular areas may be granted. It is expected that any deficiencies will be remedied in the student's first year of study at the School. Applicants seeking admission to the DrPH program who do not already have an MPH or equivalent degree should apply first for the MPH degree with the understanding that an application to the DrPH Program may be submitted during the MPH year. Applicants should consult with the DrPH office for more information.

Curriculum—The curriculum is planned on an individual basis and depends on the student's interests and needs, the departmental requirements, and the nature of the program to be undertaken. A period of field work may be required for those who have not had field experience. The purpose of the curriculum is to provide training and experience, under faculty guidance, in the design and execution of a research project, the analysis and interpretation of the findings and their application to public health policy and practice, and the preparation of a doctoral dissertation. The dissertation must be acceptable to the department in which the student is working and to a committee rep-

resenting the School. The student must defend his or her dissertation in a final oral examination.

Departments currently offering programs leading to a Doctor of Public Health degree include Environmental Health, Epidemiology, Molecular Microbiology and Immunology, and Population and Family Health Sciences. The Department of Health Policy and Management offers a part-time DrPH program in Health Care Management and Leadership (http://www.jhsph.edu/Dept/HPM/Degree_Programs/Doctoral/DrPH.html/index.html).

Graduation—Students must meet the following requirements before being awarded the degree:

1. In general, a minimum of four consecutive terms of registration as a doctoral student in full-time residence is required for all doctoral degrees. If a student completes a master's program at this School and continues into the DrPH program within three years, the subsequent four-term, full-time residency requirement may be waived by the department if the residency was satisfied as part of the master's program. (Under special circumstances, part-time programs may be arranged through consultation with the department and the DrPH Program.)
2. Coursework for the DrPH degree includes both Schoolwide core courses, departmental core courses, electives and seminars defined by the student's department. The student must have enrolled in four terms of the DrPH seminar series, and taken one course in scientific integrity.
3. Satisfactory completion of a departmental comprehensive written examination that evaluates the student's mastery of the core DrPH knowledge and the principal subject given by the major department.
4. Satisfactory performance on a preliminary oral examination administered by a committee of the faculty. The examination should be taken no later than the student's third year in residence and before beginning significant work on the dissertation.
5. Completion of a satisfactory investigation in the principal subject and its presentation in the form of a dissertation, approved by a committee of the faculty. (In any study involving human subjects, clearance by the Committee on Human Research must be obtained prior to the initiation of the investigation.)
6. Conduct a successful final oral defense of the dissertation before a committee of the faculty.
7. Written acceptance of the dissertation from Committee chair and faculty advisor.

8. Submission of the dissertation for binding. For the full-time programs, not more than seven years may elapse between the date of matriculation and fulfillment of all requirements for the degree. A bound copy of the dissertation must be submitted to the DrPH Program Office.

Master of Science

This program is designed for students wishing to prepare themselves for professional work in fields covered by the interests of the departments of the School. Candidates work closely with faculty, and the curriculum is arranged through consultation with the faculty advisor and the department.

Admission—To be accepted as a candidate, the student must have a degree in arts, science, or medicine and have completed a major in mathematics or in one of the physical, biological, or social sciences. The application must have the approval of the head of the department in which the student wishes to work.

Applicants nearly always are obliged to take and submit the results of the Aptitude Test of the Graduate Record Examination as one of the requirements for admission.

Curriculum—The curriculum varies with the department of the student's major interest and with the individual's needs. In addition to the work in his or her own department, the student is required to take courses in at least two other departments of the School.

Departments currently offering programs leading to a Master of Science degree include Biostatistics, Environmental Health Sciences (environmental health engineering, occupational and environmental health, and physiology), Epidemiology, Health Policy and Management (Genetic Counseling), International Health, Mental Health, Molecular Microbiology and Immunology, and Population and Family Health Sciences.

Graduation—The following requirements must be met before the student is presented for the degree:

1. A minimum of 64 credits is required to complete the degree. The department offering the degree shall determine what proportion of the required academic credits may be taken in full-time residence and what proportion may be taken on a part-time basis. Not more than four calendar years may elapse between the date of matriculation and fulfillment of all requirements for the ScM degree.
2. At least 12 credit units of formal course work are required in courses outside of the student's primary department. At least six of these credits must be taken in the Johns Hopkins Bloomberg School of

Public Health. The remaining outside credit units may be earned in any department or division of the University.

3. A written examination in the principal subject administered by the student's department.
4. Satisfactory completion of a course in the responsible conduct of research, e.g., 550.860 Research Ethics, or 306.665 Research Ethics and Integrity: U.S. and International Issues.
5. Students are expected to conduct laboratory or field research culminating in the preparation of a thesis. The extent of this research is in accordance with the need to satisfy the thesis requirement and must be approved by a committee of the faculty. (In any study involving human subjects, clearance by the Committee on Human Research must be obtained prior to the initiation of the investigation.)

Master of Health Science

MHS degrees are specialized masters degrees offered in each of the academic departments of the School.

Depending on the department and specific area of study, the MHS degrees provide opportunities for advanced study and research or prepare individuals to begin or advance their careers as public health professionals in their chosen area of study. The professional MHS degree programs offer an alternative to the MPH degree.

Professional MHS degree programs provide students who do not have prior health-related professional experience with specialized in-depth academic training followed by internships that provide opportunities to apply classroom instruction to public health practice. For individuals with prior health-related professional experience, professional MHS programs provide specialized in-depth training to advance these skills followed by internships for more advanced practice experience. Departments that offer professional MHS degrees programs are: Environmental Health Sciences (industrial hygiene), Health Policy and Management (health education; health policy; health finance and management), International Health (behavioral and community interventions; disease prevention and control; health systems and management; human nutrition; vaccine science and policy) and Population and Family Health Sciences (*see departmental section for description*).

MHS programs for advanced study and research provide students with in-depth academic training in preparation for graduate or professional schools or participation in research. These advanced study and research MHS programs are offered by the depart-

ments of Biochemistry and Molecular Biology (reproductive biology), Biostatistics, Environmental Health Sciences (*see departmental section for description*), Epidemiology (*see departmental section for description*), Molecular Microbiology and Immunology (*see departmental section for description*), Graduate Training Program in Clinical Investigation, Mental Health (*see departmental section for description*), and Population and Family Health Sciences (demography).

Admission—To be accepted as a candidate, the applicant must hold a baccalaureate with strong academic backgrounds in the natural or social sciences. All applicants must demonstrate ability to master the quantitative and analytical content of the program. Applicants are usually required to complete and submit the results of the Aptitude Test of the Graduate Record Examination.

Curriculum—All MHS programs require a minimum of 64 credit units for graduation to be completed over a minimum of four terms. All MHS degree candidates in programs for advanced study and research must successfully complete courses on the responsible conduct of research (e.g., Research Ethics 550.860 or Research Ethics and Integrity 306.665 or equivalent) and Public Health Perspectives on Research 550.865. All MHS degree candidates in professional programs receive training in the five areas of knowledge considered by the Council on Education for Public Health to be basic to public health and must successfully complete a field placement practicum or equivalent. Time to complete the degree depends upon the specific requirements of the program. Not more than four calendar years may elapse between matriculation and completion.

Graduation—A minimum of 64 credit units is required for the Master of Health Science degree, as is completion of the Academic Ethics Module. Each program has also developed its own specific requirements for this degree, including admission, course, and residence requirements. Requirements for a culminating essay and/or field placement practicum are also specific to the degree program. For details, contact the department.

Doctor of Science

This program enables qualified students who have an aptitude for scientific research to obtain advanced training in one of the disciplines that underlie the field of public health. This training emphasizes the mastery of principles and methodology of one of the biological, medical, behavioral, or cognitive sciences as represented in the various departments of the School.

After admission each student must give indications of critical ability and resourcefulness, as well as a good

grasp of the elementary principles of the natural sciences, especially biology, before final acceptance as a candidate. The student works closely with a member of the faculty in the department of his or her major interest, who assumes primary responsibility for guiding the course of study. Students devote most of their time to their own specialty but are expected to achieve some breadth of training through study in other departments of the School and of the University. The major work in the student's field includes research which is intended to lead to an original contribution to existing knowledge.

Admission—For acceptance as a candidate for this degree, the student must have a degree in arts, science, or medicine, and appropriate basic training as required by the department. The approval of the head of the department in which the student wishes to study is required for admission.

Applicants nearly always are obliged to take and submit the Aptitude Test of the Graduate Record Examination as one of the requirements for admission. Either before admission or following acceptance the student must provide evidence of satisfactory completion of adequate courses in physics, chemistry, mathematics, and biology. The type and extent of these required subjects will vary with the student's field of specialization.

Curriculum—The Doctor of Science degree represents outstanding achievement in the scholarship of discovery, signifies a capacity for independent research, and is primarily a degree for those individuals with research and/or teaching as their goal. The curriculum is planned by the department under the concept stated above, namely, that it contain breadth of coverage in addition to intensive work in the field of special study. The progress of each ScD student's research is followed regularly, at least once per year, by a Thesis Advisory Committee consisting of the thesis advisor and two to four other faculty. The objective of the Thesis Advisory Committee is to provide continuity in the evaluation of progress and development of the student.

Graduation—Students must meet the following requirements before being presented for the degree:

1. Satisfactory completion of a departmental comprehensive written examination in the principal subject given by the major department.
2. In general a minimum of four consecutive terms of registration as a doctoral student in full-time residence is required for all doctoral degrees. If a student completes a master's program at this School and continues into the ScD program within three years, the subsequent four-term, full-time residency requirement may be waived by the department if the residency was satisfied as part of the master's program.

The full-time residency requirement must be fulfilled prior to the preliminary oral examination.

3. Satisfactory completion of a preliminary oral examination administered by a committee of the faculty. The examination should be taken not later than the student's third year in residence and before significant engagement in thesis research. Not more than seven years may elapse between date of matriculation and fulfillment of all requirements for the degree.
4. Course work as required by the department. In addition, at least 18 credit units must be satisfactorily completed in formal courses outside the student's primary department. Among these 18 credit units, not less than nine (9) credit units must be satisfactorily completed in the Johns Hopkins Bloomberg School of Public Health. The remaining outside credit units may be earned in any department or division of the University. Candidates who have completed a master's program at this School may apply 12 credits from this program toward the above requirement.
5. Satisfactory completion of a two-term course, 550.865 Public Health Perspectives in Research (during second or third year), and a course in the responsible conduct of research, e.g., 550.860 Research Ethics, or 306.665 Research Ethics and Integrity. Doctoral students who have earned a Master of Public Health degree within the last 10 years may receive a waiver for 550.865.
6. Completion of a satisfactory investigation in the principal subject and its presentation in the form of a thesis, approved by a committee of the faculty. The material contained in the thesis should be worthy of publication in a scientific journal in the field involved. (In any study involving human subjects, clearance by the Committee on Human Research must be obtained prior to the initiation of the investigation.) Where appropriate to their career interests, students will be expected to gain relevant teaching experience, either before arrival at this School or as part of the education program at the School.
7. Oral defense of the thesis by the candidate before a committee of the faculty.
8. Written acceptance of the thesis from Committee chair and student advisor.
9. Submission of the thesis for binding.

Doctor of Philosophy

Curriculum—The Doctor of Philosophy degree represents outstanding achievement in the scholarship of discovery, signifies a capacity for independent research, and is primarily a degree for those individuals with research and/or teaching as their goal. The curriculum is planned by the department under the concept stated above, namely, that it contain breadth of coverage in addition to intensive work in the field of special study. The progress of each PhD student's research is followed regularly, at least once per year, by a Thesis Advisory Committee consisting of the thesis advisor and two to four other faculty. The objective of the Thesis Advisory Committee is to provide continuity in the evaluation of progress and development of the student. All PhD Programs are under the academic jurisdiction of the University-wide Graduate Board.

Admission—Well-qualified students with evidence of exceptional ability in acquiring the bachelor's or master's degree may be accepted following recommendation of the department in which they wish to study.

Applicants nearly always are obliged to take and submit the results of the Aptitude Test of the Graduate Record Examination as one of the requirements for admission.

Graduation—Students must meet the following requirements before being presented for the degree:

1. Satisfactory completion of a departmental comprehensive written examination in the principal subject given by the major department.
2. A minimum of four consecutive terms of registration as a full-time student is required. If a student completes a master's program at this School and continues into a PhD program within one year of completing the master's program, the subsequent four-term residency may be waived by the department if it was satisfied as part of the master's program. The full-time residency requirement must be fulfilled prior to the preliminary oral examination.
3. Satisfactory completion of a preliminary oral examination administered by a committee of the faculty. This examination also serves as the University Graduate Board's oral examination and is under the jurisdiction of that board. The examination should be taken not later than the student's third year in residence and before significant engagement in thesis research. Not more than seven years may elapse between the date of matriculation and fulfillment of all requirements for the degree.

4. Course work as required by the department. In addition, at least 18 credit units must be satisfactorily completed in formal courses outside the student's primary department. Among these 18 credit units, not less than nine (9) credit units must be satisfactorily completed in the Johns Hopkins Bloomberg School of Public Health. The remaining outside credit units may be earned in any department or division of the University. Candidates who have completed a master's program at this School may apply 12 credits from this program toward the above requirement.
5. Satisfactory completion of a two-term course, 550.865 Public Health Perspectives in Research (during second or third year), and a course in the responsible conduct of research, e.g., 550.860 Research Ethics, or 306.665 Research Ethics and Integrity. Doctoral students who have earned a Master of Public Health degree within the last 10 years may receive a waiver for 550.865.
6. Completion of a satisfactory investigation in the principal subject and its presentation in the form of a thesis, approved by a committee of the faculty. The material contained in the thesis should be worthy of publication in a scientific journal in the field involved. (In any study involving human subjects, clearance by the Committee on Human Research must be obtained prior to the initiation of the investigation.) Where appropriate to their career interests, students will be expected to gain relevant teaching experience, either before arrival at this School or as part of the educational program at the School.
7. Oral defense of the thesis by the candidate before a committee of the faculty.
8. Written acceptance of the thesis from Committee chair and student advisor.
9. Submission of the thesis for binding.

MPH JOINT AND DUAL DEGREE PROGRAMS

MPH/JD

The Johns Hopkins Bloomberg School of Public Health, in cooperation with the Georgetown University Law Center, offers a dual degree program in law and public health. The program trains students in the overlapping fields of law, public health, and ethics. Students must apply to and be accepted by both institutions. Students in the program will earn a

Juris Doctor degree from Georgetown and a Master of Public Health degree from Johns Hopkins. The dual degree program takes a total of four years, including one summer. Students will normally complete one year of the JD degree program at Georgetown, and then spend 11 months (starting in July) completing the MPH program requirements, returning to Georgetown to complete the last two years of the JD program. The MPH degree is awarded upon completion of the JD degree. The program is co-directed by Jon S. Vernick, JD, MPH, and Stephen P. Teret, JD, MPH, and includes several other public health lawyers as faculty members. For additional information about the dual MPH/JD degree, contact the co-director of the program, Jon S. Vernick, JD, MPH, The Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Baltimore, MD 21205 (email: jvernick@jhsph.edu).

MPH/MBA

The Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins School of Professional Studies in Business and Education offer a joint Master of Public Health and Master of Business Administration degree. This unique 18-month program of full-time study enables students to integrate the philosophies, functions, and competencies of the seemingly disparate fields of public health and business. Students in this program acquire knowledge and skills in the principles of population-based health as well as finance and management, which will enable them to be effective managers and leaders in health-related agencies and organizations. Graduates will be able to assess the health needs of a defined population; develop, analyze, and implement targeted health policies and programs; lead the process of change within one's own organization and community; manage health care organizations to achieve identified goals; and communicate messages to targeted audiences. Applications for the combined program must be obtained from and submitted to the School of Public Health and will be reviewed by the admissions committees of both Schools. **Please note the academic policies for the MPH program will be applied to courses taken at the Johns Hopkins Bloomberg School of Public Health, and the academic policies for the MBA program will be applied to courses taken at the Johns Hopkins School of Professional Studies in Business and Education.** For more information, contact Mr. Paul Whong at mphprog@jhsph.edu. Go to <https://app.applyyourself.com/?id=jhsph> for an application.

MPH/MSN

The Johns Hopkins University School of Nursing and the Johns Hopkins Bloomberg School of Public Health offer a joint Master of Public Health/Master of Science in Nursing degree program. The 18-month program of full-time study is designed specifically for nurses seeking to link their clinical and managerial interests with public health to improve delivery of nursing services in various settings. Two-thirds of the program consists of core courses in nursing and public health; the remaining elective courses allow students to pursue individualized concentrations. Applications for the joint program must be obtained from and submitted to the School of Nursing, and will be reviewed by the admissions committees of both the School of Nursing and the Johns Hopkins Bloomberg School of Public Health. The final admission decision is made by the steering committee for the joint program. For more information and an application, contact the Office of Admissions and Student Services, The Johns Hopkins School of Nursing, 525 N. Wolfe Street, Baltimore, MD, 21205, 410-955-7548, or visit http://www.son.jhmi.edu/academic_programs/masters/msn_mph/msn_mph.asp.

MPH/MSW

The Johns Hopkins Bloomberg School of Public Health and the University of Maryland School of Social Work (UMSSW) offer a dual MPH/MSW program that provides students with the knowledge and skills that will enable them to be effective practitioners and leaders in health-related agencies and settings. Students obtain a population-based perspective and expertise in the quantitative sciences that, when combined with training in social work, prepare them to be effective members of the social work community with the ability to plan, implement, and evaluate programs.

During the program students complete all required MSW course work in a specified area of concentration, as well as the core MPH requirements and a customized public health curriculum in the student's area of interest. The University of Maryland grants students 6–9 academic credits for their public health work, and the Johns Hopkins Bloomberg School of Public Health allows students up to 20 credits of special studies to pursue expertise in a combined public health and social work practicum.

The MPH/MSW program is designed for pursuit on a full-time basis. Students normally complete one year of the MSW program at UMSSW and then spend eleven months (starting in July) completing the MPH program requirements, returning to UMSSW to complete the MSW program. The MPH degree is

awarded upon completion of the MSW degree. The standard MPH admission prerequisite of previous health professional training or two years of health-related experience is waived for students who successfully complete the combined program. All other prerequisites must be met.

Interested applicants must apply to each school separately and simultaneously, taking care to indicate the appropriate beginning year for the MPH program on the Johns Hopkins Bloomberg School of Public Health application form. Official transcripts and GRE scores must be sent separately to each school, and recommendations must be provided separately using the appropriate forms. Further information about the MSW program at the University of Maryland may be obtained by contacting the Office of the Associate Dean for Admissions at 410-706-8044, or visit www.ssw.umaryland.edu.

OTHER DUAL GRADUATE DEGREE PROGRAMS**MD/DOCTORAL DEGREE**

This program is offered in conjunction with the Johns Hopkins School of Medicine. Admitted students generally complete one or two years of medical school before devoting full-time status to completing the doctoral degree requirements of the department and the Johns Hopkins Bloomberg School of Public Health, then return to the School of Medicine to complete the MD degree. Candidates for a dual MD/doctoral degree must fulfill all of the normal requirements for the doctoral degree. A minimum of one year (four academic terms) in full-time residence in the Johns Hopkins Bloomberg School of Public Health is required. In instances where course work taken as part of the medical school curriculum is equivalent in content to one year of the academic program for the doctoral degree, the residence requirement in the Johns Hopkins Bloomberg School of Public Health will be appropriately revised.

Other opportunities for medical students are available for further training in special programs in the areas of Biostatistics, Biochemistry and Molecular Biology, Environmental Health Sciences, Epidemiology, Health Policy and Management, Molecular Microbiology and Immunology, International Health, and Population and Family Health Sciences.

MHS/MA

This program combines the Master of Arts in International Relations degree at the Paul H. Nitze School of Advanced International Studies (SAIS) in

Washington, D.C., and the Master of Health Science in International Health at the Johns Hopkins Bloomberg School of Public Health. By mutual agreement, each two-year program may be completed in a total of three years, mainly through the replacement of a period of MHS field practice with course work at SAIS.

The program is designed to prepare students for careers that require a high level of health care expertise and a sophisticated understanding of international, political, socioeconomic, and cultural issues. Emphasis is given to the synthesis of knowledge and experience essential for planning and managing health services in a variety of settings around the world. Students in the program normally spend one year at the Johns Hopkins Bloomberg School of Public Health during the first two years of the program. The SAIS portion emphasizes public policy, development economics, regional studies, and foreign language instruction. The Johns Hopkins Bloomberg School of Public Health component stresses the basic disciplines of epidemiology, biostatistics, and health policy and planning, along with specialized training in public health.

Separate applications must be submitted to each school and admission offered in both. Students already enrolled in one school will be considered by the other in competition with all other applicants for admission to the incoming class. For a SAIS catalog and application visit <http://www.sais-jhu.edu/admissions> or call 202-663-5700.

BA/MHS

The School of Arts and Sciences, in conjunction with the Johns Hopkins Bloomberg School of Public Health, offers a major in Public Health Studies for undergraduates interested in careers in public health. The major has been tailored to prepare individuals for careers that have a basic science foundation, including medicine, careers that orient students to health policy and management (domestic and international), and to other social and behavioral sciences, and to the quantitative sciences fundamental to public health.

The Johns Hopkins Bloomberg School of Public Health Department of Environmental Health Sciences will consider JHU undergraduates majoring in Public Health Studies for admission to the BA/MHS program. Students should formally apply for early admission during their junior year. Applications can be obtained from the School's Admissions Office, Suite E1002; 410-955-3543, from www.jhsph.edu/Admissions/, or from the public health advisor on the Homewood campus.

Admitted students must complete the BA degree before formally enrolling in the School, but up to one-half of the public health credits earned interdivisionally toward the BA may also apply toward the MHS degree.

Johns Hopkins undergraduate Public Health Studies majors are welcome to apply to any MHS program offered by the School during their senior year; however, the credit requirements will be the same as for other students entering MHS the program.

For further information, contact Dr. James D. Goodyear, Public Health Studies advisor, at 3505 N. Charles Street, Homewood campus; 410-516-7812; goodyear@jhu.edu.

INTERDEPARTMENTAL AND INTERDIVISIONAL PROGRAMS

Listed in this section are academic programs and courses of study that involve two or more departments, divisions of the University, or other universities. Some may require formal admission leading to a degree. Others are listed to bring to students' attention opportunities for study in an interdisciplinary field. Students should also consult individual departments' listings where other opportunities for joint study are described.

Graduate Training Program in Clinical Investigation

The Doctor of Philosophy, Master of Science, and Master of Health Science degrees in Clinical Investigation are a joint enterprise of the Johns Hopkins University's School of Medicine and the Johns Hopkins Bloomberg School of Public Health. The Graduate Training Program in Clinical Investigation (GTPCI) is targeted toward internal physician postdoctoral fellows and faculty in clinical departments of the School of Medicine. Students with other backgrounds may also be considered for the MHS track of the GTPCI Program.

Please contact the GTPCI office by phone, 410-502-9734, or email, gtpci@jhsph.edu, with any questions about the program.

N. Franklin Adkinson, MD
Program Director
Charles W. Flexner, MD
Associate Director

Advisory Council and Standing Committee Members

Richard Ambinder, MD
 Fredrick L. Brancati, MD
 Susan Furth, MD, PhD
 Steven Goodman, MD, PhD
 Diane E. Griffin, MD, PhD
 Craig W. Hendrix, MD
 Michael J. Klag, MD
 Sharon S. Krag, PhD
 Robert S. Lawrence, MD
 Paul S. Lietman, MD, PhD
 Steven Piantadosi, MD, PhD
 Neil R. Powe, MD, MPH, MBA
 Peter J. Pronovost, MD, PhD
 Andrea Ruff, MD
 Jonathan Samet, MD
 Christopher D. Saudek, MD
 Scott L. Zeger, PhD
 James Yager, PhD

GTPCI Academic Program

Following one year of clinical fellowship, a year of full-time coursework is undertaken. Subsequently, two or more years of mentored clinical research is undertaken in conjunction with a faculty mentor from the sponsoring School of Medicine clinical department or division. Upon successful completion of didactic instruction and demonstration of substantial achievement in Clinical Investigation in the form of an acceptable PhD or ScM thesis, the degree of Doctor of Philosophy or Master of Science is awarded by the Johns Hopkins Bloomberg School of Public Health. Candidates are no longer admitted directly to the Master of Science program; all candidates for a thesis-requiring degree must qualify under the PhD program.

There is also a track leading to a Master of Health Science degree in Clinical Investigation. Health professionals with an advanced degree may apply. The MHS is a one-year, full-time program, although there is an option to pursue the degree part-time for an interval not to exceed two years.

GTPCI Curriculum

There are highly specific curricula for the thesis-requiring degree programs and the MHS in clinical investigation. Both curricula were designed to provide competence in Biostatistics, Epidemiology, Biomedical Writing and Clinical Investigation. Detailed curriculum information can be found at <http://www.jhsph.edu/gtpci/curriculum.html>.

Admissions Requirements

The GTPCI programs seek students from a variety of academic and professional backgrounds. Application instructions specific to the GTPCI degree programs, related forms, deadlines, and transcript and standardized test requirements can be found at <http://www.jhsph.edu/gtpci/application.html>.

The following requirements apply:

- MD or appropriate advanced degree in a biomedical science
- Personal statement of professional and clinical research goals
- Letters of recommendation that meet the criteria outlined on the GTPCI website
- TOEFL (for applicants for whom English is a second language)

Note: Minimum requirements may differ slightly for each degree program. Please contact the program office with any questions regarding the admission criteria.

PhD—*In addition, PhD admissions requirements include:*

- Subspecialty physicians who have completed at least one year of clinical training
- Physicians who have at least a three-year fellowship appointment within JHMI
- Other health professionals with an appropriate advanced degree and substantial human subjects research experience

MHS—*In addition, MHS admissions requirements include:*

- Physicians and other health professionals with advanced degrees with only one year available for full-time training
- Post-doctoral investigators without current academic appointments within JHMI
- JHMI faculty or post-doctoral clinical fellows limited to part-time study
- Post-doctoral clinical investigators interested in coursework without a thesis research requirement
- Medical students desiring intensive clinical research training at the pre-doctoral level

Note: Only students who are accepted and matriculate into the MHS degree program will be eligible to receive a MHS degree. PhD or ScM students who are not able to complete their thesis research do not have the option to receive an MHS degree.

Health Communication Program

The Interdepartmental Program in Health Communication (HCP) is jointly offered through the departments of Health Policy and Management, and Population and Family Health Sciences for students enrolled in one of these departments. Its purpose is to provide a strong theoretical and research base for the field of health communication and to promote a better understanding of the role of modern technology and mass media in the diffusion of health innovations and the promotion of health behavior change. The educational objectives of the program range from providing a basic orientation to the field of health communication to equipping students with a working knowledge of health communication principles, strategies, and research methodologies. The program offers a series of courses in the area of health communication in addition to the regular degree requirements of each participating department. Areas of expertise in health communication include family planning, reproductive health, child survival, and AIDS.

Students who have completed one year of coursework in the HCP at the School are eligible to enroll in related courses at the University of Pennsylvania's Annenberg School of Communication. For more information on this option, refer to the section, Other Programs.

Students do not have to apply to the HCP but must already be accepted to or enrolled in a degree program in the department of Health Policy and Management, Population and Family Health Sciences, or International Health. Requirements for the Health Communication Program consist of 16 units of HC course work in addition to the regular requirements of their respective degree programs. Once completed, students are awarded certificates of course concentration in health communication at graduation together with the master or doctoral degree from their respective department.

For more information, contact the Health Communication Program, care of Dr. Dina Borzekowski, Johns Hopkins Bloomberg School of Public Health, Department of Population and Family Health Sciences, 615 N. Wolfe Street, Baltimore, MD 21205. Email: dborzeko@jhsph.edu. Phone: 410-502-8977.

Program in Law and Public Health

The Program in Law and Public Health is an interdisciplinary unit in the Johns Hopkins Bloomberg School of Public Health sponsoring research and teaching in the legal dimensions of health policy.

There are several components of the program. The Center for Law and the Public's Health, a collaborative effort of the Johns Hopkins Bloomberg School of

Public Health and the Georgetown University Law Center, is devoted to research, training, and practice in public health law. In addition, a joint MPH/JD degree, also co-sponsored by the School of Public Health and Georgetown University, is affiliated with the program. Postdoctoral fellowships are also available. Students may include masters and doctoral candidates who have already completed some or all of their legal training. Other students wishing a focus in this area are directed to courses, seminars, and independent studies offered by faculty affiliated with the program.

The program is co-directed by Jon S. Vernick, JD, MPH, and Stephen P. Teret, JD, MPH, and includes several other public health lawyers as faculty members. For additional information about the joint MPH/JD degree, contact the co-director of the program, Jon S. Vernick, JD, MPH, The Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Baltimore, MD 21205 (email: jvernick@jhsph.edu).

For information about the Center for Law and the Public's Health, contact the executive director for the center, James Hodge, JD, LL.M., The Johns Hopkins Bloomberg School of Public Health, Hampton House, Room 527A, 624 N. Broadway, Baltimore, MD 21205. Email: jhodge@jhsph.edu. Website: www.publichealthlaw.net/.

Tropical Medicine Curriculum

The importance of tropical diseases to physicians and other public health workers interested in working in developing nations has prompted the School to offer two alternatives for prospective students. One is a series of short intensive courses entitled The Summer Institute in Tropical Medicine and Public Health (four two-week courses given over eight weeks in the summer; see the chapter, Continuing Professional Education). The other is through formal degree programs offered by various academic departments within the School.

Tropical medicine and public health are important fields in developing countries and in the United States, with its large population of immigrants, travellers to tropical countries, and numerous agencies operating health and development activities abroad. The 2004 summer institute is organized by the Department of Molecular Microbiology and Immunology and the Department of International Health.

During the regular academic year, the School offers many courses relevant to the health of people in developing countries. Students interested in the biological basis of infectious diseases and immunology should consult course listings in the Department of Molecular

Microbiology and Immunology. Students interested in comprehensive health planning and administration, operations research, community medicine and travel medicine, the epidemiology and control of infectious diseases, or the special area of nutrition should consult courses listed under the Department of International Health; for tropical environmental health problems, the Department of Environmental Health Sciences; for demography, family planning, and administration, the Department of Population and Family Health Sciences; and reproductive biology, the departments of Biochemistry and International Health. Other courses of interest appear under the Department of Epidemiology. Relevant courses and seminars are also sponsored by the University-wide Immunology Council.

A variety of degree programs is available through the various departments of the School.

For further information, contact Dr. Thaddeus Graczyk, Department of Molecular Microbiology and Immunology, 410-614-4984; or Dr. Robert Gilman, Department of International Health, 410-614-3639 or email ropmed@jhsph.edu.

CERTIFICATE PROGRAMS

Certificate programs represent courses of study in specific areas of public health. The Johns Hopkins Bloomberg School of Public Health offers various certificates to degree students only, degree and non-degree students, and non-degree students only. Admissions standards and completion requirements vary with each certificate program. As there are fewer course requirements for certificate programs than for formal degree programs, degree candidates may also pursue certificates as part of their degree program. Courses within certificate programs must be taken for academic credit. A certificate of program completion is issued by the sponsor upon satisfactory completion of course work.

CERTIFICATE PROGRAMS OPEN TO JOHNS HOPKINS UNIVERSITY OR SCHOOL OF PUBLIC HEALTH STUDENTS ONLY:

Gerontology

Educational Objectives

To provide training in core competencies in gerontology designed to supplement the basic training students receive in their home discipline. Based on a public health approach to gerontology, the objectives of this certificate program are to add depth and breadth to interdisciplinary training in gerontology for students who seek a research- or policy-focused career in the field of gerontology.

Intended Audience

Doctoral students and post-doctoral fellows who are pursuing a masters degree (either ScM or MHS) involving a research-oriented thesis. The certificate is intended for students who are committed to a career in the field of gerontology and who wish to be recognized as broadly trained in core competencies as well as their particular area of specialization.

Admissions Criteria

Doctoral students in good standing (or masters students with a previous doctoral degree or equivalent) who are enrolled as full-time students (PhD, DrPH, ScM, or some MHS) in the School of Public Health. Applicants must submit a letter of application that explains the nature of the research that they will do as part of the culminating project required by their home department, and how the Certificate Program in Gerontology fits into their research and career goals. Applicants must be in a degree program and be writing a research-oriented thesis or essay. Potential applicants are strongly encouraged to submit their application materials by December 31 of the academic year in which graduation is expected. Applications submitted just prior to graduation will be rejected.

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=1>

Health and Human Rights

Educational Objectives

To increase understanding and foster attitudes among health professionals regarding the importance of linkages between guarantees of human rights and protection of public health professionals and the vital role of health professionals in promoting human rights.

To develop familiarity with international human rights standards, instruments, and codes related to human rights, especially those that bear fiercely upon the health of populations and individuals and the roles of health professionals in enforcing and protecting those standards.

To develop skills for investigating, analyzing, and documenting abuses of human rights as they relate to health and public health practice.

Intended Audience

The Certificate Program in Health and Human Rights is open to any enrolled degree candidate within the Johns Hopkins University System.

Admissions Criteria

Prior admission to a Johns Hopkins University degree program; letter to faculty sponsor requesting admission, outlining courses to be taken, and providing estimated timetable for completion; and approval of student's faculty advisor.

For more information on this certificate program at the School of Public Health please go to:
<http://commprojects.jhsph.edu/academics/Detail.cfm?id=2>

Health Communication

Educational Objectives

A minimal level of competency in seven important aspects of health communication including: interpersonal health communication; designing and evaluating messages and programs; legal, ethical, advocacy issues; use of new technology; theoretical approaches and models; images in the mass media; and exposure to, search for, and use of health information.

Intended Audience

Current degree candidates in the School of Public Health.

Admissions Criteria

All eligible students applying for this certificate must complete an application form and submit it to the Department of Population and Family Health Sciences Academic Office. The application can be obtained at the following link:

www.jhsph.edu/dept/pfhs/degree_programs/special_prog/hlthcommapp.pdf

Students MUST apply no later than the first week of the last term in which the final course of the certificate is being completed.

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=20>

Health Disparities and Health Inequality

Educational Objectives

To train future leaders in research on health disparities and health inequality; to train individuals for leadership in health policy and public health practice on the underlying causes of health inequality; and to prepare public health professionals in known solutions for health disparities and health inequality.

Intended Audience

Students enrolled in any graduate degree program (masters and doctoral) in any division of the Johns Hopkins University.

Admissions Criteria

Admission into the program may be granted to any student pursuing a graduate degree at Johns Hopkins. Applicants must submit a letter addressed to the faculty sponsor outlining their career objectives and how the certificate program will enhance those objectives.

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=21>

Humanitarian Assistance

Educational Objectives

Humanitarian emergencies are becoming an increasingly important aspect of international health. The number of refugees and displaced persons is now estimated to be above 40 million with some 5–8,000 additional persons being displaced somewhere every day. Industrialization, rapid population growth, and political instability have greatly increased the population at risk from natural and man-made disasters in developing countries.

The objective of this program is to equip graduates with the basic skills and capacities needed to plan and manage humanitarian assistance to displaced populations and for disaster preparedness and mitigation in the international context. These include planning, epidemiological assessment, control of communicable diseases, information and surveillance systems, environmental sanitation, and meeting nutritional needs. Additional areas covered include the protection of women and vulnerable populations, the basics of

international humanitarian law, documentation and prevention of human rights abuses, psychosocial and mental health issues, and establishing logistical support for refugees and displaced persons.

Intended Audience

Health professionals pursuing masters, or doctoral degrees in the School of Public Health who may be responsible for health care to displaced populations.

Note: This certificate parallels the MPH Concentration Area in Humanitarian Assistance: Health and Human Rights of Vulnerable Populations. The MPH concentration area has more depth, and involves a seminar and additional course requirements. MPH students who have a major career interest in humanitarian emergencies and human rights are encouraged to pursue the concentration area.

Admissions Criteria

This certificate is open for health professionals pursuing masters or doctoral degrees in the School of Public Health, and is offered in conjunction with course work in these programs. The certificate will be awarded on satisfactory completion of the required courses.

For more information on this certificate program at the School of Public Health please go to:
<http://commprojects.jhsph.edu/academics/Detail.cfm?id=9>

Injury Control

Educational Objectives

On completion of the Certificate in Injury Control, the student will be able to describe the importance of injury as a public health problem; the epidemiology of major injury problems; be familiar with important sources of data for injury research; be able to use problem-solving methodology to identify and develop appropriate intervention strategies; be familiar with evaluation methods appropriate for injury interventions; have acquired in-depth knowledge of at least one injury problem and one type of intervention strategy; and have demonstrated ability to develop, synthesize, and apply this knowledge by compiling an integrated program plan to address an injury problem of interest to them.

Intended Audience

Students in graduate degree programs in the School of Public Health who are interested in receiving concentrated training in the practice of injury control and/or in research applied to injury control. The program should be particularly relevant to students in the

MPH program and to those in the Departments of Health Policy and Management, Population and Family Health Sciences, and Epidemiology.

Admissions Criteria

To be eligible to receive a certificate in Injury Control, students must be admitted to a graduate degree program in the Johns Hopkins Bloomberg School of Public Health.

For more information on this certificate program at the School of Public Health please go to:
<http://commprojects.jhsph.edu/academics/Detail.cfm?id=3>

International Health Policy and Financing

Educational Objectives

To develop skills and knowledge related to analysis and decision-making for health systems' organizations, financing, and service delivery, particularly in low and middle-income countries and for health policy issues related to disadvantaged populations. The curriculum focuses on policy analysis, economics, financing and oversight of national health systems.

Intended Audience

Policy-makers, policy analysts, and senior managers of health systems in low and middle-income countries, as well as program officers, analysts, and policy makers in international organizations. The intended audience includes MHS and PhD students in the Departments of International Health and Health Policy and Management, and MPH students.

Admissions Criteria

The certificate is coursework-based. Students intending to complete the certificate must be enrolled in a degree program in the School of Public Health, and must advise the faculty sponsors of intent to complete the certificate prior to completion of coursework.

For more information on this certificate program at the School of Public Health please go to:
<http://commprojects.jhsph.edu/academics/Detail.cfm?id=6>

Maternal and Child Health

Educational Objectives

Upon completion of the core courses of the Maternal and Child Health Certificate, individuals will gain a broad understanding of the field which focuses on the health and welfare of women and children.

Competencies achieved will include understanding of the biological, social, and behavioral basis for a MCH

program; knowledge of the historical development of the field of MCH; knowledge of significant past and current national legislative mandates relative to MCH, including the structure and roles of legislative and administrative bodies at the national, state, and local levels; ability to define and describe the MCH population in a community; ability to prepare and interpret data; an understanding of the normal patterns of human growth and development; knowledge of the organization and financing of health systems in the U.S.; an understanding of the design, implementation, and evaluation of MCH needs assessment domestically and internationally; and an ability to identify essential gaps in existing programs serving mothers and children.

Intended Audience

Degree students in the School of Public Health with an interest in the health of women and children.

Admissions Criteria

Students must be admitted to a degree program in the School of Public Health. The application for this program can be found at:

www.jhsph.edu/Dept/PFHS/Degree_Programs/Special_Prog/Specialized_MCH.html

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=7>

Vaccine Science and Policy

Educational Objectives

The objectives of this certificate program are to educate students in research, development and testing of vaccines and in public health vaccination policies.

Intended Audience

This certificate is open to all degree-seeking candidates within the Johns Hopkins Bloomberg School of Public Health.

Admissions Criteria

Prior admission to a JHSPH degree program and written approval of student's faculty advisor.

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=4>

CERTIFICATE PROGRAMS OPEN TO JOHNS HOPKINS UNIVERSITY OR SCHOOL OF PUBLIC HEALTH STUDENTS AND NON-DEGREE STUDENTS:

Environmental Health

Educational Objectives

The objectives of this certificate program are to educate and train student to: identify the major environmental health issues facing public health professionals today; describe the sources of environmental agents, their distribution in the environment, transfer routes to the human, and possible health effects; describe the basic biological mechanisms underlying the association between prior exposure and subsequent development of adverse effects; and discuss control strategies, including primary, secondary, and tertiary interventions.

Intended Audience

Public health professionals currently practicing environmental health without adequate formal training, current degree candidates in the School, and non-degree candidates wishing to begin their formal training in environmental health.

Admissions Criteria

The program is open to any student qualified to register as a special student limited or special student regular, and Bloomberg School of Public Health degree candidates. Information on registration in a special student category be found at:

http://www.jhsph.edu/Admissions/sample_courses.html

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=14>

Health Education

Educational Objectives

Upon completion of this certificate program, students will possess the knowledge and skills necessary to understand and modify the personal and environmental factors that influence health-related behaviors, and by doing so, impact the overall health of individuals and communities. Upon completion of the core courses of the certificate, students will gain a broad understanding of health education principles, theories, and strategies, and will achieve the competencies considered central to effective health education.

Intended Audience

This certificate is open to any student in a degree program within the School of Public Health and to any student qualified to register as a special student limited or special student regular. However, when these participants obtain 16 credits, they will be required to apply to the School, either for a degree program or as a special student regular. Special student regular status will allow these individuals to complete the remaining credits for the certificate. Application as a special student regular to the School will also provide a check of appropriate academic credentials prior to the completion of the certificate. Information on registration in the special student category may be found at http://www.jhsph.edu/Admissions/sample_courses.html

Admissions Criteria

Students interested in pursuing this certificate should complete an application available at Hampton House, room 492 before the last day of the add/drop period in the term in which they are completing the final course for the certificate.

For more information on this certificate program at the School of Public Health please go to: <http://commprojects.jhsph.edu/academics/Detail.cfm?id=12>

Health Finance and Management

Educational Objectives

Educational objectives of this Certificate Program are to provide an overview of current issues in the management and finance of health services delivery organizations to facilitate the development of knowledge and skills in one or more of the following areas: understanding the healthcare organizational environment; understanding organizations and building leadership skills; process management and measurement; human resource development and management; financial management; strategic planning; and the measurement and analysis of performance indicators.

Intended Audience

The intended audience includes current students in the Department of Health Policy and Management who are majoring in health policy or behavioral sciences, but who are also interested in a health management concentration; MPH students interested in health management and finance issues; and non-degree students interested in current topics in health services management. Non-degree students must have completed at least an undergraduate degree in an accredited college or university.

Admissions Criteria

Non-degree students must have completed at least an undergraduate degree from an accredited college or university, and will enroll as special students limited.

For more information on this certificate program at the School of Public Health please go to: <http://commprojects.jhsph.edu/academics/Detail.cfm?id=5>

Health Policy

Educational Objectives

The goal of the Certificate in Health Policy is to provide graduate training in the area of public policy as it applies to health. Participants will develop the knowledge and skills necessary to understand and influence policies that affect the health of individuals and communities.

Intended Audience

Students in the Master of Arts in Public Policy of the Johns Hopkins Institute for Policy Studies and MPH, MHS and doctoral students in the School of Public Health.

Admissions Criteria

Students must be enrolled in a graduate program at the Johns Hopkins Bloomberg School of Public Health or be enrolled in the Master of Arts in Public Policy and Program in the Institute for Policy Studies. The certificate program is also open to non-degree students interested in current topics in health policy who hold at a minimum a baccalaureate degree from an approved institution. When these participants obtain 16 credits, they will be required to apply to the School of Public Health, either for a degree program or as a special student regular. Special student regular status will allow these students to complete remaining credits for the certificate.

Note: This certificate is only open to students available for on-site coursework in East Baltimore.

For more information on this certificate program at the School of Public Health please go to: <http://commprojects.jhsph.edu/academics/Detail.cfm?id=8>

Occupational Health Certificate

Educational Objectives

The objectives of this certificate program are to enable students to: identify the major occupational health issues (i.e., work-related adverse health effects) facing public health professionals today; describe the application of environmental, biological, medical and public health principles to the recognition, reduction, and

prevention of occupationally-related adverse health effects; develop and evaluate control strategies for occupational problems, including primary, secondary, and tertiary interventions; and discuss current topical areas of concern such as employee assistance programs, employee health promotion, drug testing, and impairment and disability policies.

Intended Audience

Public health professionals currently practicing occupational health without adequate formal training and current degree candidates in the School who wish to focus on occupational health issues.

Admissions Criteria

The program is open to any student qualified to register as a Special Student Limited, Special Student Regular or degree candidate.

For more information on the certificate programs at the School of Public Health please go to:
<http://commprojects.jhsph.edu/academics/Detail.cfm?id=10>

Public Mental Health Research

Educational Objectives

Offered through the Department of Mental Health, this program provides graduate training in understanding the causes and consequences of mental disorders in populations including: clinical and behavioral features, the incidence and prevalence of disorders, and identification of factors that promote or influence the occurrence, persistence, or severity of mental and behavioral disorders. The goals are to increase the epidemiologic expertise of psychiatrists and other mental health professionals, and to increase the number of epidemiologists, biostatisticians, and health policy makers, with an interest in psychiatric disorders.

Intended Audience

The certificate is intended for students in a degree program in the Johns Hopkins Bloomberg School of Public Health interested in mental health; psychiatrists in residency training; postdoctoral fellows; and non-degree seeking students who have at least an undergraduate degree from an accredited college or university.

Admissions Criteria

Current School of Public Health students; non-degree seeking students must have at least an undergraduate degree from an accredited college or university.

Prior or concurrent course in 340.601 Principles of Epidemiology and two terms of biostatistics required (e.g., 140.611-612; 140.621-624; or 140.651-654.)

Applicants must declare their intent to obtain a certificate, in a letter to the faculty sponsor, before enrolling in their final term of courses for the certificate.

For more information on the certificate programs at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=17>

Risk Sciences and Public Policy Certificate

Educational Objectives

This certificate provides instruction in risk assessment methods, policy, and risks communication. Courses are designed to provide the scientific basis of environmental health risk and the ability to evaluate the policy implication of these scientific relationships for reducing risk.

Intended Audience

1. Research scientists interested in bridging science and policy
2. Public and private sector professionals who evaluate scientific data in the context of risk assessment and management
3. Decision makers and risk managers, such as regulators, corporate executives, elected officials, economists, engineers, and lawyers
4. Those responsible for communicating risk, such as lobbyists, journalists, and non-governmental organizations

Admissions Criteria

See <http://www.jhsph.edu/RiskSciences/Academics/Admissions.html> for admissions criteria and for the application.

For more information on the certificate programs at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=15>

Tropical Medicine

Educational Objectives

This eight-week summer program is designed to provide training in tropical medicine and related public health issues through a multidisciplinary approach. It is also designed to prepare participants for working with current and emerging health problems in developing countries and health problems of travelers. This program focuses broadly on issues of tropical health and

on clinical tropical medicine. Students will acquire a strong scientific basis for preventing, diagnosing, treating, and controlling tropical health problems.

Intended Audience

Johns Hopkins Medical Institution students and staff; health professionals; other individuals with an interest in tropical medicine.

Admissions Criteria

Graduate degree in a health related science; or bachelors degree with significant experience in a health profession.

For more information on this certificate program at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=13>

CERTIFICATES OPEN TO NON-DEGREE STUDENTS ONLY:

Public Health Practice Certificate

Educational Objectives

The certificate recipient will be able to: identify, analyze and use available disease and behavioral surveillance data; apply leadership in the management of health systems organizations; communicate effectively to constituencies both within and outside of the health system; determine public health information needs; use appropriate basic statistical, demographic, and epidemiologic techniques to evaluate data with attention to quality control issues; support state and local public health agency efforts in assessing health needs, quality of services, and strategies for health services research; and identify and help fill needs for information and responses to new threats to public health.

Intended Audience

1. Members of the public health workforce who seek formal education and training in public health principles, problem solving skills, quantitative methods, social and behavioral determinants of disease, organization and management of health programs, and preparation for new and emerging threats to the health of the public.
2. Public health practitioners interested in obtaining the MPH degree in the part-time and internet-based programs of the School may apply the course credits of the certificate upon subsequent application and admission to the MPH program.

3. Matriculated degree candidates are not eligible for this certificate.

Admissions Criteria

Bachelor's degree with at least one college level biology course and one college level math or statistics course; a strong record of successful academic performance.

For more information on the certificate programs at the School of Public Health please go to:

<http://commprojects.jhsph.edu/academics/Detail.cfm?id=11>

OTHER PROGRAMS

Community-based Public Health (CBPR)

To reinforce the importance and strengthen competencies in CBPR at the Johns Hopkins Bloomberg School of Public Health and University-wide, the School offers multiple education/training opportunities in community-based participatory research. These include a year-long seminar series, an annual CBPR workshop, and a two-year post-doctoral training program funded by the W. K. Kellogg Foundation. Faculty, students, staff, and community leaders are invited to participate in any of these training opportunities. The emphasis is on multi-disciplinary partnerships with community-based organizations and institutions to improve health services and health status of vulnerable populations in Baltimore. A network of faculty conducting CBPR are available as resources and CBPR faculty are closely linked to Johns Hopkins Urban Health Institute. For more information, contact Ms. Lee Bone, 410-955-6887 or email lbone@jhsph.edu.

JHU/Annenberg School for Communication, University of Pennsylvania Educational Collaboration in Health Communication

To enhance the training available in public health communication at the Johns Hopkins Bloomberg School of Public Health, The Johns Hopkins University and the University of Pennsylvania, Annenberg School for Communication have agreed to collaborate on educational activities by offering an opportunity for students to attend courses given at both universities as a supplement to the normal course of study. This interdisciplinary program for both public health practitioners and researchers will integrate communication theory and practice with contributions from the social, psychological, educational, and behavioral sciences. This agreement allows students in doctoral, and in some cases, Master of Science or Master of Health Science degree programs, to attend

courses given at both universities as a supplement to their normal course of study. Students are eligible for the program after they have completed one academic year of study in a graduate program in their home institution. Exchange students register and pay tuition on a full-time basis at their home institution, and register as special students at the exchange institution. Information on courses attended at the institution visited will be recorded on the student's transcript at the home institution.

For more information, contact Debra Roter, 410-955-6498, or email, droter@jhsph.edu.

Public Health Ophthalmology Programs

The Dana Center for Preventive Ophthalmology, in collaboration with the Johns Hopkins Bloomberg School of Public Health, offers a one- to two-year combined Public Health Ophthalmology Fellowship/Master of Public Health Program. The program is offered to a limited number of qualified candidates every three years. The next program will be offered in 2004–05. The program provides intensive training in research methods for the prevention, treatment, and control of the major blinding diseases worldwide. Faculty from the Wilmer Institute, the Johns Hopkins Bloomberg School of Public Health, and international guest lecturers cover topics in cataract, trachoma, xerophthalmia, onchocerciasis, glaucoma, and other eye diseases. For more information, contact Dr. John Kempen via email at jkempen@jhsph.edu.

Postdoctoral Programs

The Johns Hopkins Bloomberg School of Public Health encourages applications for postdoctoral fellow training. Opportunities to extend training beyond the years of doctoral education exist in a number of departments. Although postdoctoral training programs have an overall general similarity, the mark of this educational process is its variety and flexibility. Planning for such a program necessarily depends on agreement between the trainee and the supervising faculty member of any particular department.

A fellow may register to take any didactic course for credit as long as the total of accumulated and registered credits is less than 16. There is no limit to the number of courses a fellow may audit. Postdoctoral fellows may not earn a degree and register as special students. Special students must adhere to established registration and course change deadlines and are obliged to follow all the general academic and administrative policies that apply to degree candidates at the School.

Information and applications for these programs can be obtained from the Admissions Office (www.jhsph.edu/Admissions).

Residency Training

General Preventive Medicine Residency Program

Director: Miriam H. Alexander, MD, MPH

The General Preventive Medicine Residency Program is a two-year program with the goal of preparing physicians in the theoretical, practical, and clinical knowledge and skills essential to leadership roles in the design, management, and evaluation of population-based approaches to health. As preventive medicine specialists, graduates of the program assume leadership positions in government, international health, academia, and clinical medicine. The program consists of an academic year and a practicum year and is accredited by the Accreditation Council for Graduate Medical Education. Completion of the program leads to eligibility for certification by the American Board of Preventive Medicine.

Physicians must complete at least one year of clinical training in an approved program in the United States or Canada prior to entering the program. This year may either be a transitional internship or part of a residency. Graduating medical students in the United States or Canada have the option of selecting the GPM residency through the National Resident Matching Program; such residents do a rotating internship at the Mary Imogene Bassett Hospital in Cooperstown, New York, prior to beginning their academic year at Johns Hopkins. This combined internship/residency program is limited to one resident each year.

Residents are affiliated with one of six participating departments of the School that represent an area of concentration within the program. These departments are Epidemiology, Health Policy and Management, International Health, Mental Health, Molecular Microbiology and Immunology, and Population and Family Health Sciences.

The academic year begins in July and is a combined residency and Master of Public Health (MPH) degree year. The MPH program is enriched by a two-month summer orientation to the specialty of preventive medicine. Throughout the year, twice-weekly preventive medicine seminars, quarterly Grand Rounds, and a preventive medicine core course enhance the educational program. Residents are expected to participate in preventive medicine research during the academic and/or practicum years of the residency; publication and presentation of research results are encouraged.

The practicum year, or second year of the program, is designed to train the resident in a variety of preven-

tive medicine skills through practical preventive medicine rotations that last two to three months each. The program offers approximately 20 different rotations in a wide variety of local, state, federal, and international public health settings. Residents complete a minimum of one rotation in each of the following areas: biostatistics/epidemiology, management and administration/medical management, and either clinical preventive medicine or occupational medicine/environmental health.

A one-month elective in preventive medicine is available for third- or fourth-year medical students who have completed some clinical rotations, as well as for residents in other specialties. The purpose of the elective is to provide both a broad overview of the field and a brief, in-depth experience in some area of preventive medicine/public health.

Please refer to the School's Department Guide for application information or visit the School's website, www.jhsph.edu. For further information about the residency or the elective, visit www.jhsph.edu, or contact the administrator, Linda Myers, General Preventive Medicine Residency Program, Johns Hopkins Bloomberg School of Public Health, Room WB602, 615 N. Wolfe Street, Baltimore, MD 21205; phone: 410-955-3630; fax: 410-614-1582; email: gpmr@jhsph.edu.

Occupational and Environmental Medicine Residency

Director: Clifford S. Mitchell, MS, MD, MPH

The overall objective of the Occupational and Environmental Medicine Residency is to train specialists for careers in any of the major sectors of the field—academia, industry, government, clinical practice, or labor—and provide expertise in both clinical and preventive medicine. The program is fully accredited by the Accreditation Council for Graduate Medical Education. Completion of the program leads to eligibility for certification by the American Board of Preventive Medicine. In general, all residents receive stipend support, tuition support, and health, life, and disability insurance.

The residency is a two-year program. The first year, the academic year, involves course work leading to the Master of Public Health (MPH) degree, plus certain experiences specific to the residency such as seminars, research projects, and plant visits. The second, or practicum, year consists of rotations in a variety of settings, including clinical, government, industry, and union organizations. An optional third year may be spent in a postdoctoral research fellowship for trainees interested in academic careers.

Please refer to the School's Department Guide for application information or visit the School's website, www.jhsph.edu.

For further information, visit the School's website, www.jhsph.edu, or contact the administrator, Linda Myers, Occupational and Environmental Medicine Residency Program, the Johns Hopkins Bloomberg School of Public Health, Room WB602, 615 N. Wolfe Street, Baltimore, MD 21205; phone: 410-955-3630; fax: 410-614-1582; email: occmed@jhsph.edu.

Continuing Professional Education

The Johns Hopkins Bloomberg School of Public Health is committed to providing opportunities for students to pursue graduate academic degrees and continuing professional education on a part-time, flexible basis. Both full- and part-time University faculty teach in these programs to ensure an education as high in quality as experienced by the full-time students. Courses are offered in different formats and venues including courses via the Internet, condensed courses taken during summer and winter institutes and courses taken at the University's Montgomery County campus.

By blending a mix of these formats, working professionals can participate in the rich academic environment of the School while continuing their careers. Courses taken through these programs may be used toward degree and certificate programs, as well as for continuing education. Some of the courses are available for continuing medical education and continuing education credit.

INTERNET-BASED COURSES

Many of the School's courses are now available via the Internet. In addition, the Master of Public Health Program is available via the Internet. (For details, please see the section on the Master of Public Health Program or visit www.jhsph.edu/Academics/MPH/index.html.) The flexibility provided by this format allows students to fit courses into their own schedules. Courses can be accessed anytime, anywhere—as long as students have reliable Internet service and have access to a computer sufficiently equipped to handle the learning materials provided in the courses. Please note that Internet courses may not be taken on an audit basis. For more information and a full listing of online courses, please visit <http://distance.jhsph.edu>, or call 888-548-6741.

Because the School's Internet courses use unique online learning tools, successful completion of the Introduction to Online Learning course (offered via the Internet only) is required prior to participating in any of the School's Internet courses. For registration details and additional course information, please visit <http://distance.jhsph.edu/oll>.

MONTGOMERY COUNTY CAMPUS COURSES

The School of Public Health offers core courses at the University's Montgomery County Campus (MCC). These courses form a foundation on which working professionals in the Washington area can build a plan of study that, upon admission, can be applied to various degree or certificate programs. For the most current and detailed information about the School's opportunities for programs and professional development, please visit the School's website at <http://www.jhsph.edu> or call 301-294-7060.

CERTIFICATES

Certificate programs represent courses of study in specific areas of public health. The School offers various certificates designed for degree students only, for degree and non-degree students together, and for non-degree students only. Admissions standards and completion requirements vary with each certificate program. As there are fewer course requirements for certificate programs than for formal degree programs, degree candidates may also pursue most certificates as part of their degree program. Courses within certificate programs must be taken for academic credit. A certificate of program completion is issued by the sponsor upon satisfactory completion of course work. For details, please see the section on Certificates, in the Academic Information chapter, or visit commprojects.jhsph.edu/academics/Certificate.cfm.

CONTINUING LIFELONG EDUCATIONAL OPPORTUNITIES FOR ALUMNI

For information please visit www.jhsph.edu/alumni.

SPECIAL STUDENTS

Students participating in continuing professional education programs for academic credit, who are not registered as degree candidates, are considered Special Students. For a full description of this category, please see the section on Administrative Regulations.

INSTITUTES

The School offers a winter institute and various departments within the School sponsor summer institutes which provide short-term, intensive educational opportunities for public health practitioners and other professionals whose schedules necessitate a more flexible, non-traditional approach to their studies. Many of the courses offered through these institutes are

equivalent to regular academic courses. All the listed institute courses may be taken for academic credit.

Continuing medical education and continuing education credits are also available for most of these courses.

Summer Institute in Environmental Health Sciences

The Department of Environmental Health Sciences conducts a Summer Institute in Environmental Health Sciences over a three-week period each May and June. The institute is designed for practicing health professionals (e.g., physicians, nurses, industrial hygienists, toxicologists, safety engineers) and those responsible for health safety and environmental matters in either government services or the private sector. For more information, contact Pamela W. Derrick, Department of Environmental Health Sciences, the Johns Hopkins Bloomberg School of Public Health, Room E7036, 615 N. Wolfe Street, Baltimore, MD 21205. Phone: 410-502-5918. Email: pderrick@jhsph.edu. Website: www.jhsph.edu/dept/EHS/summerinstitute.html

Graduate Summer Institute of Epidemiology and Biostatistics

The Departments of Epidemiology and Biostatistics at the Johns Hopkins Bloomberg School of Public Health jointly sponsor the Graduate Summer Institute of Epidemiology and Biostatistics each June–July. The program has been in existence since 1983, and has trained hundreds of students from both the U.S. and numerous other countries from all continents. The courses are intended to develop an understanding of principles of epidemiologic research, and will present epidemiologic methods and their application to the study of the natural history and etiology of disease. After completion, participants will be able to evaluate the methods used to measure health effects in populations, judge policy questions raised by the epidemiologic literature and become familiar with the principles and difficulties of collecting, interpreting and analyzing data.

The 22th Annual Graduate Summer Institute of Epidemiology and Biostatistics will be held June 21–July 9, 2004. The program will offer courses with varying durations, with some of the courses offered over a three-week period, some two weeks and many one-week courses. In addition to offering basic and advanced courses on epidemiologic and biostatistical concepts and methods that can stand alone, the curriculum allows students combinations of courses that either expand their breadth of knowledge or enable

them to delve more deeply into a specialized topic area of their choice. Many of the courses are equivalent in content and number of academic credits to those taught during the regular academic year.

Examples of courses offered include Principles of Epidemiology; Intermediate Epidemiology; Clinical Trials: Issues and Controversies; Methods and Applications of Cohort Studies; Applications of the Case-Control Method; Conducting Epidemiologic Research; Infectious Disease Epidemiology; Statistical Reasoning in Public Health I and II; Epidemiologic Methods for Planning and Evaluating Health Services; Introduction to the SAS Statistical Package; Gene Expression Data Analysis; Family Based Genetic Epidemiology and Genetic Epidemiology in Populations.

For more information, contact Ayesha Khan at 410-955-7158 or akhan@jhsph.edu, or visit <http://www.jhsph.edu/summerepi>.

Health Emergencies in Large Populations (H.E.L.P.) Summer Institute

Each July, the Department of International Health, Center for International Emergency, Disaster and Refugee Studies, holds a summer institute course at the East Baltimore campus. The course is designed to develop or improve the skills of persons and organizations providing emergency health services in humanitarian emergencies. During the three-week session, the following topics are covered: Definition and Response, Disaster Management, Conducting Assessments, Responding to Needs, Environmental Health, Food and Nutrition, Information Surveillance, Communicable Diseases, Reproductive Health, Humanitarian Ethics, International Humanitarian Law and International Human Rights Law.

By the end of the course, participants will be able to

- select methods of assessment
- carry out a general or a specific assistance health program
- foresee the possible extension of immediate assistance projects into development programs
- develop a common approach to provision of services among humanitarian organizations
- monitor adequacy of service provided to affected population assess of choice in actions by their ethical implications
- apply the principles of international humanitarian law to providing services in conflict situations

For more information, please contact Katrina Alston, Program Coordinator, at 443-287-3853 or kalston@jhsph.edu.

Summer Institute in Mental Health Research

The Summer Institute in Mental Health Research focuses on methodological and substantive topics of particular importance in mental health and substance use research. It is intended for working professionals or students who are interested in conducting or evaluating research in the epidemiology of specific types of disorders, the implementation and evaluation of population mental health services, and/or the measurement and statistical issues that commonly arise when studying mental health.

After completing the program, participants will recognize strengths and weaknesses of different research questions, know the major issues involved in the collection and analysis of mental health data on the population level, and understand the steps involved in the scientific, empirical evaluation of services and interventions targeted for mental health outcomes.

For more information contact Adriane King at 410-955-3908 or visit the website at www.jhsph.edu/Dept/MH/Summer_Institute.html.

Summer Institute in Health Policy and Management

The Health Policy and Management Summer Institute at the Johns Hopkins Bloomberg School of Public Health is dedicated to training health professionals and public health practitioners and strengthening their public health knowledge and skills. Courses are taught by distinguished faculty whose research contributes new knowledge on a wide range of public health issues, and who work with public health leaders locally, nationally and internationally.

The Annual Summer Institute provides the same academically rigorous courses offered to degree candidates during the regular academic year, only compressed into one- to four-day sessions.

To maximize learning opportunities, Summer Institute participants receive reading materials in advance of the course and are expected to read the materials prior to the course session. This allows Summer Institute participants to maximize discussion and application of concepts to real world examples when they meet with course faculty. The Institute is intended for public health practitioners, public health students, or those for whom a public health perspective is beneficial. Past attendees have included physicians, hospital and MCO administrators, health educators, health policy analysts, and public health students, to name a few. The Annual Health Policy and Management Summer Institute is held each June. For more information, contact Ms. Pamela Davis at

pdavis@jhsph.edu or 410-614-1580. Or visit http://www.jhsph.edu/Dept/HPM/Non_Degree/institutes/index.html.

Summer Institute in Population and Family Health /Maternal and Child Health

The Summer Institute in Population and Family Health/Maternal and Child Health is designed to provide training in the importance of contemporary issues in population health and maternal and child health. This is an intensive two-week program that includes evening and weekend work. Instruction takes place through a mixture of seminars, short lectures, group work, and individual presentations.

After completion, participants will be able to describe the importance of contemporary issues in population health and maternal and child health; be familiar with (basic) research of major population/maternal and child health problems; translate research into policy and programmatic implications; and be aware of sources of information that they may use to further develop research and programmatic skills. For more information, contact Linda Kelly at 410-955-3804 or lkelly@jhsph.edu. Or visit http://www.jhsph.edu/Dept/PFHS/MCH_SummerInst/index.html.

Summer Institute: Principles and Practice of Injury Prevention

This one-week intensive summer course is sponsored by the Department of Health Policy and Management through the Center for Injury Research and Policy. It is targeted to those new to the field of injury prevention and those who seek to broaden or advance their basic skills and knowledge. Students come from around the world to participate in this unique learning experience promoting valuable interaction and shared learning between participants. Leading experts in injury control from Johns Hopkins, and from other institutions around the nation, conduct the lectures and discussions on behavioral, biomechanical, environmental, epidemiological, legislative, policy, and community partnership approaches to injury prevention and control. Small group exercises are held daily, which enable participants to apply what they've learned in lecture and integrate this with previous experience. The week culminates with group reviews of grant proposals using the strategies, skills, and tools learned throughout the week.

This course may be taken for 3 academic units, or for a non-credit certificate of attendance. CHECH credits are also offered. If taken for academic credit, the student will be evaluated on participation in group

exercises and a final paper. Credit in this course may be applied toward the JH Certificate in Injury Prevention.

For more information, contact Sharon Cullinane, Co-Director, at 410-955-2636, or scullina@jhsph.edu or visit the website at www.jhsph.edu/InjuryCenter/index.html.

Summer Institute in Quality Assurance Management Methods for Developing Countries

The Department of International Health offers an intensive two-week Summer Institute in Quality Assurance Management Methods in June of each year. The course is intended for those who have or will have responsibility for health systems in developing countries. It provides participants with a thorough knowledge of the principals and methods of quality assurance management for health systems in developing countries and a mastery of the practical tools to put such a system in place. Particular emphasis is placed on primary community health care, coupled with district hospital support and the management of integrated district-level health care services. Learning takes place through a mixture of seminars, short lectures, group work, and individual presentations. Each participant is expected to develop a quality improvement project that is relevant to that individual's planned future activities.

For more information, contact Katrina Alston, program coordinator, 443-287-3853, or visit the QAMM website at www.jhsph.edu/qamm.

Summer Institute in Tropical Medicine and Public Health

The Department of Molecular Microbiology and Immunology and the Department of International Health sponsor an annual Summer Institute in Tropical Medicine and Public Health during July and August. The institute consists of four two-week intensive courses that focus on selected areas of tropical medicine and related public health issues.

The institute is designed for health professionals who want a focused exposure to infectious disease problems and control measures relevant to developing countries. Students gain expertise in clinical tropical medicine, travel medicine, parasitology, community health, principles and methods of epidemiology, social sciences relevant to operating disease control programs, appropriate technologies for water supply and sanitation, and management of disease control programs. Students interested in other relevant courses offered during the regular academic year as part of the

tropical diseases curriculum should refer to Interdepartmental and Interdivisional Programs in the Academic Information chapter.

For more information, contact Dr. Thaddeus Graczyk, Department of Molecular Microbiology and Immunology, 410-614-4984, or Dr. Robert Gilman, Department of International Health, 410-614-3639, or email tropmed@jhsph.edu.

Johns Hopkins Center for American Indian Health Summer Institute

The Johns Hopkins Center for American Indian Health conducts a Summer Institute in introductory biostatistics and epidemiology over a one-week period each summer. The institute is designed to introduce tribal health leaders and related healthcare professionals and paraprofessionals who have had no formal training in epidemiology, but may be working to determine tribe's priorities for health care, determining tribe's approaches to addressing priorities, or working/interested in clinical research or public health within tribal communities. For more information, contact Felicia Frizzell or Allison Barlow, Johns Hopkins Center for American Indian Health, the Johns Hopkins Bloomberg School of Public Health, 621 North Washington Street, Baltimore, MD 21205. Phone: 410-955-6931, or email: ffrizzell@jhsph.edu or abarlow@jhsph.edu.

Winter Institute in Public Health

In January, the School offers a two-week winter institute. The primary goal is to provide short term intensive courses for part-time degree candidates. The courses are also offered for audit for non-degree seeking students. The institute offers courses in areas including biostatistics, epidemiology, international health, mental health, molecular microbiology and immunology, population and family health sciences, and health policy and management. For more information on winter institute courses for part-time degree-seeking students, contact Natalie Crowe at 410-955-9348, email ncrowe@jhsph.edu.

For information on courses for audit, contact Helen Walters at 410-614-5985, email hwalters@jhsph.edu, or visit the School's website at www.jhsph.edu/winter.

SPECIAL LECTURESHIPS

The Anna M. Baetjer Lecture—When Anna Baetjer died in 1983, her friends, family, and associates established the Anna M. Baetjer Lecture to honor Dr. Baetjer (ScD 1924 and Professor Emerita). The fund supports an annual lecture in environmental health sciences.

The Leroy E. Burney Lecture—Leroy E. Burney, MD, MPH, was the eighth Surgeon General of the United States Commissioned Corps (1956–1961). His seminal report linking smoking to lung cancer provided the template for every Surgeon General who followed, and a legacy for all those in health promotion and disease prevention who struggle to control tobacco use. After his death in 1998, Dr. Burney's family, friends, and colleagues established an annual Schoolwide lecture to honor his contributions to public health.

The J. Douglas Colman Lecture—In 1974, friends and family of the late Dr. J. Douglas Colman established a memorial fund to support a periodic lecture by an outstanding individual on the subject of medical care evaluation, quality of care, and modes of financing medical care.

The Edward and Nancy Dodge Lectureship—Established to honor Dr. Edward Dodge (MPH, 1967) and his late wife Nancy for their generous support of the Center for a Livable Future, this annual lecture given by a distinguished visiting scholar addresses the public health implications of ecosystem change resulting from our personal and policy choices.

The Dean's Lectures—Now part of the Preventive Medicine/Public Health Grand Rounds series, these lectures provide an opportunity to introduce faculty members and students to outstanding accomplishments and issues presented by distinguished lecturers who are on the faculty, or, in special cases, from outside the School.

Delta Omega Lectureship—The Alpha Chapter of the Delta Omega Honor Society sponsors a guest lectureship at their annual induction dinner.

The Larry Ewing Lectureship—When Larry Ewing died in 1990, friends, faculty, colleagues, and former students of Dr. Ewing established a memorial fund to support an annual lecture by an outstanding visiting scientist in the field of reproductive biology.

The Dr. Lawrence Grossman Lectureship—Larry Grossman served as chair of the department of Biochemistry and Molecular Biology from 1975 to 1989. In 1991, Dr. Grossman's friends, colleagues, former students and family established this endowed fund to honor Dr. Grossman and support an annual lecture in Biochemistry.

The John H. Hanks Lectureship in Immunology and Microbiology—In 1990 family, friends, faculty, colleagues, and former students established an endowed fund to honor Dr. Hanks' memory as an eminent scientist with a periodic lectureship on the topics of immunology and microbiology.

The Roger M. Herriott Lectureship—In 1975 friends and associates honored Dr. Roger M. Herriott upon his retirement as the chairman of the Department of Biochemical and Biophysical Sciences by establishing a fund to support a periodic lecture in biochemistry and molecular biology.

The Harold and Marilyn Menkes Memorial Lectureship—Friends, faculty, colleagues, and former students of Drs. Harold and Marilyn Menkes established this memorial fund in 1987 to support an annual lecture by a leading pulmonary scientist.

Administrative Regulations

CATEGORIES OF STUDENTS

Degree Students

Students who enter a full-time degree program must remain continuously enrolled at the Johns Hopkins Bloomberg School of Public Health in an officially recognized student category until the program is terminated by either award of degree or official withdrawal. Doctoral students must register for a minimum of three (3) credit units per term; MHS and ScM candidates for a minimum of two (2) credit units per term. The official student categories are as follows:

In Residence—This category designates students who are pursuing graduate degree work under the direction and supervision of the full-time faculty of the School. This work may be full-time or part-time and may include periods when students are enrolled in formal courses, doing research work, or writing their dissertations. Students who are in residence register for credit and are assigned grades.

Residence status as applied here has no direct relation to where a student is physically located. In some situations, graduate degree work may be done at locations other than the Johns Hopkins Bloomberg School of Public Health provided that the adequacy of the direction and supervision of the student by full-time faculty of the School has been ensured. Individuals in these circumstances who register appropriately receive full credit toward fulfilling residence requirements for the degree as set forth in the catalog. Students who have been in nonresident status are required to return to resident status during the academic term during which degree requirements are completed. See Tuition and Fees for tuition fee assessment.

Postcertified Student Status—A postcertified student in a doctoral program is a student in good academic standing who has completed the residence requirements, has unconditionally passed the preliminary oral examination and the departmental written comprehensive examination, and has fulfilled the outside course requirements. A postcertified master's student has satisfactorily completed the residence and outside course requirements as well as the written departmental comprehensive examination (if applicable). A postcertified student who is engaged in full-time dissertation research, field placement, or the equivalent, under the direction and supervision of the faculty of the School, must maintain quarterly regis-

tration in a recognized student status.

Nonresident—This category is designed to accommodate students who wish to maintain their degree status during periods when they are not involved in formal work at the Johns Hopkins Bloomberg School of Public Health. Such status is reserved for a candidate for the doctorate who has completed all requirements for the degree except the dissertation and who has permission to continue work on the dissertation away from the School. The nonresident student does not use the School's resources and maintains regular but minimal contact with his/her advisor. It is expected that nonresident students will be working on their dissertations on a full-time basis in geographic areas that do not permit frequent contact with School faculty or use of School resources.

With the approval of the individual's advisor, department chair, and the Committee on Academic Standards, a graduate student may request to be placed in nonresident status on an annual basis, for a period not to exceed a total of five years. In order to remain in nonresident status, it is the responsibility of the sponsoring academic department to determine whether the student's dissertation pursuits are equivalent to full-time study and to confirm that the student is continuing to make the equivalent of full-time progress on the dissertation. A student who is physically present at the School, or who is employed by the University, may not be in nonresident status.

To be considered for this category, prior approval must be obtained from the chair of the student's department, from the student's advisor, and from the Committee on Academic Standards. Once approved for this status, students must register quarterly to maintain degree candidacy. Students in nonresident status during academic year 2004–2005 will be required to pay a fee equal to fifteen percent of full-time tuition. In order to conform with U.S. government regulations, a foreign student requesting nonresident status must have a clearance from the Office of International Student and Faculty Services.

Students who have been nonresident will be required to return to resident status during the academic term in which degree requirements are completed.

Leave of Absence—Leave of absence refers and is limited to students who, while in good academic standing, are forced to withdraw temporarily from graduate work due to reasons beyond their control, such as illness, military service, financial exigency, or pressing personal reasons justifying an interruption of the degree program. Leaves of absence are typically limited to one year except for military service. Students requiring additional terms of leave beyond the one-year, must reapply. No more than two years of

leave may be granted. The period is regarded as an approved break in study. This does not mean, however, that a student working on a thesis who has completed all other degree requirements is entitled to a leave of absence. Only students enrolled in programs requiring a continuous registration need to apply for leaves of absence.

Students planning to request a leave of absence must file a petition, which is signed by the departmental chairman, the student's advisor, appropriate staff members in the area of Student Services, and the director of the Office of Records and Registration. This form is available from the Office of Records and Registration. An active file fee of \$50 per term is assessed for each term within the leave of absence period. Prior to resuming the degree program, students on leave of absence must notify the department chairman and the director of the Office of Records and Registration. Upon return from leave of absence status, students must register for a minimum of two successive terms before completion of their degree programs.

Important—The failure of a student to register without obtaining an approved leave of absence or nonresident status will be considered a withdrawal. The student considered to be withdrawn must be formally readmitted before resuming a program of study. Upon readmission, a student must be registered for a minimum of two consecutive terms prior to graduation.

TIME LIMITATIONS

To maintain degree candidacy:

1. Students enrolled in master's degree programs must fulfill all requirements within the time limits prescribed for the program.
2. Doctoral students must fulfill all requirements within seven calendar years after matriculation.

The above time limitations are applicable regardless of student status, "in residence" or "nonresident," during the indicated period. The academic clock is stopped for periods in which the student is approved for leave of absence.

Special Students

All students who are not officially registered in one of the degree programs in the the Johns Hopkins Bloomberg School of Public Health are classified as special students. This may be because they have not yet attained degree status or are not seeking a School of Public Health degree and are taking selected courses for their own professional purposes. Tuition charges are applied to such students according to the number of credits for which they are registered. Special stu-

dents must adhere to established registration and course change deadlines and are obliged to follow all the general academic and administrative policies that apply to degree candidates at the School. Special student categories are as follows:

Regular—Special students may be registered for full-time or part-time course work for which they will receive academic credit although they are not enrolled in a degree program. Such students need to submit complete applications and fees to the Admissions Office and gain acceptance in advance from the chairman of the department to which they are applying.

If admitted to a degree program, the special student's residence time and accumulated credits may be applied toward the degree, contingent upon approval of the appropriate department or the director of the MPH program and the Committee on Academic Standards. However, the total number of accumulated credits for application may not exceed one-half of the number of credits required for the degree. These credits may be applied to any degree program and may be no older than three years at the time of matriculation. Any credits earned during the term of matriculation will also count toward the degree program.

Limited—This category includes persons who are permitted to enroll for selected courses of special interest, and whose attendance is limited to those courses for which the individual instructor has given explicit consent to enter. No more than 16 credit units of course work may be accumulated by a special student limited.

While special students limited receive no residence credit for the courses they take, those who may be subsequently admitted into a degree program at the School may receive credit for academic residence with the approval of the Academic Standards Committee. Course work successfully completed as a special student limited may be applied to degree programs but does not ensure admission to any program. The application fee is paid upon making application to a degree program or to special student regular status.

A student who has been terminated, dismissed, or withdrawn may not reenroll in the School as a special student limited. Such students must be formally readmitted to a program or department before registering for a course.

General Preventive Medicine and Occupational and Environmental Medicine Residents—All General Preventive Medicine (GPM) and Occupational and Environmental Medicine (OEM) residents who have completed their MPH programs and are not enrolled in another degree program in the School, but are enrolled in either of these residency

programs, are special student residents.

Residents who have completed their MPH programs must register for a minimum of 16 credit units per term until they complete their residency requirements. These credits are usually in special studies and research, but selected course work may also be appropriate. Students in this category must adhere to established registration and course change deadlines, and are obliged to follow all the academic and administrative policies that apply to degree candidates at the School. Full-time tuition is assessed on a per-term basis during the resident's training period. The resident's special studies and research registrations are graded on a pass/fail basis each term during the training period, and an official academic record (transcript) and a file will be maintained and updated. Upon satisfactory completion of the program designed for the resident, the director of the GPM residency program or the director of the OEM residency program will notify the director of the Office of Records and Registration in writing so that a certificate of attendance may be prepared.

University Interdivisional Registrants

Students in other schools of the University are admitted to courses at the Johns Hopkins Bloomberg School of Public Health on a space-available basis without the formalities of application. Registration for courses at the School must be authorized by the director of the Office of Records and Registration of the sponsoring division. An interdivisional registration form must be submitted for the corresponding academic terms. Students registered full-time during the nine-month academic year need not pay additional tuition to the host division that has approved the interdivisional registration. This is not the case in the summer or the winter intersession. Students should not plan to enroll in courses from multiple Johns Hopkins University divisions during the summer.

Because not all divisions of the University share the same grading policies, interdivisional registrants should consult their home division Office of Records and Registration to learn the appropriate grade conversion among divisions.

ACADEMIC YEAR

The School year is comprised of five academic terms as well as a summer institute and a winter intersession. Each term includes a minimum of 37 class days and is scheduled approximately as follows:

Summer Institutes.....May–July
 Summer—Regular TermJuly–August

First Term.....September–October
 Second Term.....November–December
 Winter Intersession.....January
 Third TermJanuary–March
 Fourth Term.....March–May

At the discretion of the faculty, additional class time may be arranged when weather conditions force the cancellation of classes.

The four numbered terms are considered the regular academic year. The summer term is not obligatory but may be counted as a term of academic residence for degree candidates who satisfactorily complete credit units during this period.

REGISTRATION

Persons who are enrolled in formal courses of study, who do research work under the supervision and direction of the Johns Hopkins Bloomberg School of Public Health faculty, or who otherwise receive academic credit for professional experience or training from the faculty and scientific or educational facilities of the School are required to register during established registration periods. Included among those who must register are those students and trainees who:

1. Are either entering or continuing in a degree program. This includes nonresident students who must register for each academic year.
2. Are students in academic postcertified status: defined as master's or doctoral degree candidates who have successfully passed their qualifying examinations, have fully completed their residence and outside course work requirements for the degree, and are engaged in dissertation research or the equivalent. See the section on Postcertified Status.
3. Are participating in the residency program in general preventive medicine or occupational and environmental medicine, or are classified as post-doctoral fellows in a department of the School.
4. Are not degree candidates but are attending classes either full- or part-time as regular or limited special students. Auditors must register.
5. Are participating for academic credit in regular or special summer programs or sessions sponsored by the School or any of its departments.

Students must be registered in residence during their term of completion. To maintain degree candidacy, doctoral students must register for a minimum of three (3) credit units per term; MHS and ScM candidates for a minimum of two (2) credit units per term.

Late registration occurs during the scheduled

add/drop periods of each term. A \$50 late registration fee is added to the tuition charges. **Under no circumstances can changes be made to registrations during the last two weeks of a term.**

Registration for students is contingent upon tuition accounts being current. No exceptions will be made to this policy unless special arrangements have been made through the Student Accounts Office in advance of registration.

RESIDENCE AND COURSE CREDIT

The School grants academic credit only to students who are officially registered. Credits are referred to as “units.” One unit is equivalent to eight hours of instructional contact per term. Academic credit for a course is granted only if the following conditions have been met:

1. The student has completed all course requirements, including examinations, and has received a passing grade.
2. The student has registered to take the course for academic credit at the time of enrollment during the official registration period.
3. The student has been admitted to the School, either as a special student or a degree candidate or has registered as a special student limited.

Retroactive conversion of continuing education units to academic credit units is not permitted. Likewise, a registration for audit cannot retroactively be converted to credit status. Students registered as special students limited may accumulate up to 16 credits total. After 16 credits have been earned, application to and acceptance in special student regular or degree status is required.

Course work is represented in terms of unit values. For formal courses, the number of credit units normally is equal to the number of hours of formal instruction divided by 8. The maximum allowable load per term is 22 units (credit and audit). A minimum of 12 credit units must be carried for full-time status. However, at least 16 credit units of successfully completed course units is typically required to count as full-time in acquiring academic residence.

Exceptions to the residence requirements on a part-time basis may be made only by direct action of the appropriate Schoolwide academic committee.

Units associated with audited, undergraduate, or informal courses, or courses taken to satisfy entrance conditions, are not credited in the Johns Hopkins Bloomberg School of Public Health programs.

GRADING SYSTEM

Purpose

The grading system at the Johns Hopkins Bloomberg School of Public Health serves to document the academic progress of students. The system is designed to recognize superior work and provide indications of serious problems in academic work. Current students are expected to view their grades periodically by logging onto Student Web Services, <https://registration.jhu.edu>.

Descriptive Interpretation

Two grading systems are used by all instructors in submitting grades. One is a traditional letter grading system and the other is a pass/fail option.

Grade	Quality Points	Meaning
A	4.0	Excellent
B	3.0	Good
C	2.0	Fair (satisfactory)
D	1.0	Poor
F	0.0	Fail

In addition, the letter “I” is used to designate incomplete, “W” to indicate withdrawal, “M” for multiple-term courses (grade assigned in a subsequent term), “N” or “X” in cases where the instructor fails to report grades. (Note: I, M, N, and X grades are not final grades.)

The designation “AU” indicates audit.

Field Placement, Thesis Research, Postdoctoral Research, and Special Studies and Research are graded strictly pass/fail.

No course credit will be acquired for courses in which a grade of F (fail), I (incomplete), or N or X (grade not received from course instructor) is received. No course credit will be acquired for undergraduate-level courses taken at other divisions of the University.

Because not all divisions of the University share the same grading policies, the grades awarded by faculty are based on the procedures of the course’s home division. The grades that appear on students’ academic records reflect any appropriate conversions. Interdivisional registrants are advised to direct any questions to the Office of Records and Registration of their home division.

Satisfactory Academic Progress

Satisfactory academic progress is measured by the following as they relate to one another:

1. A minimum grade point average of 2.25 for graduation in the MHS and ScM degree programs and 2.75 for graduation in the MPH program.

2. A minimum grade point average of 2.75 for graduation in a doctoral program.
3. Grades of A, B, C, or P (pass) in all courses required by the School or by the student's department.
4. Written documentation of successful completion of all School and departmental degree requirements within the established time limitations. (Refer to the sections on Graduation in each degree program description for specific requirements.)
5. Confirmation of satisfactory performance by the student's department and/or advisor as required.

Each term the progress of students is reviewed and those students not making satisfactory progress in terms of the cumulative grade point average and completion of requirements within established deadlines are identified for all academic departments. Whether a D in a particular course is considered an acceptable grade for a particular program will be determined by each department or program office. Whether a D is considered acceptable to serve as a prerequisite will be determined by the course's sponsoring department.

Pass/Fail Option

Students at the Johns Hopkins Bloomberg School of Public Health may elect to take courses on a pass/fail basis only with the consent of their academic advisor. Each department has determined for its own students which courses may be taken on a pass/fail basis. Students should consult their departmental requirements for specific grading requirements when considering the pass/fail option. Students who must submit grades to employers, to funding agencies, or to other academic programs should also consult the appropriate offices before electing the pass/fail option.

Course instructors do not know which registrants are enrolled on a pass/fail basis until final grade rosters are distributed, usually the sixth week of the term. Instructors are expected to evaluate student performance without regard to grading status and to give students appropriate feedback regarding their performance throughout the term. A grade of P will be recorded on the official grade roster for those students who have elected the pass/fail option and whose performance would otherwise be rated as A, B, or C. For students who perform poorly, instructors will assign a grade of D or F.

If an advisor, student, or department needs to know the specific grade a student earns, the student should not be permitted to enroll pass/fail. There will be no retroactive changes from regular grading to pass/fail and vice versa. If a student transfers to a program that

requires a standard letter grade for a course that the student completed pass/fail, the student must repeat the course or obtain a waiver from the department. After the add/drop period, a pass/fail change is treated as a registration change with a \$50 late payment fee.

Under no circumstances can changes be made to registrations during the last two weeks of a term.

Current students are expected to view their registration periodically by logging onto Student Web Services, <https://registration.jhu.edu>.

Deadlines for filing pass/fail requests will be adhered to without exception. Pass/fail forms cannot be accepted after the published add/drop deadline for each term. All students should consider carefully before exercising the pass/fail option. Pass/Fail or letter grades, once elected, may not be reversed on the student's official academic record.

Incompletes

The designation "incomplete" (I) will be assigned by an instructor and entered on a student's transcript when the requirements for a course have not been completed on time. An incomplete must be made up and replaced by a final grade within two consecutive terms after the conclusion of the course, or before graduation, whichever occurs first.

In the event an Incomplete is not made up within the above stated time period, a final grade of I/F will be assigned. When a final grade is assigned to replace an incomplete, the final grade will be shown, but the letter I on the transcript will remain as well.

Repeated Courses

If a course is repeated, both grades will be shown on the student's academic record, and the quality points for both will be included in the student's grade point average.

Registration Changes

Changes in course registration may be made without penalty up to the end of the second week in any term. For courses offered during the summer, and winter intersession terms, course-specific add/drop deadlines will apply. Students must obtain the instructor's approval for each course added to their official registration during the course change period. It is the instructor's prerogative to deny a student's request to add a class during the add/drop period. The advisor's permission is the only approval required for a student dropping a course during the prescribed add/drop period. A student may not change a registration after the add/drop period without presenting written

endorsement by the course instructor and the student's advisor. In the event of an approved withdrawal after the course change deadline, the letter W will be entered on the student's transcript. A late fee of \$50 will be assessed for each course change after the add/drop period; furthermore, there will be no refund of tuition for any withdrawals from courses after the add/drop period. **Under no circumstances can changes be made to registrations during the last two weeks of a term.**

Current students are expected to view their registration periodically by logging onto Student Web Services, <https://registration.jhu.edu>.

Registration Changes—Internet Courses

Internet-based courses at the School adhere to the registration and add/drop dates of the academic calendar published on page 3. For multi-term courses, part I necessitates enrollment in part II. If a student subsequently drops part II, a grade of W (withdrawn) will be assigned for the first part. Tuition for the first part will not be refunded. Students may not register for part II without having enrolled in part I.

After the two-week add/drop period, students have another four weeks to withdraw. A grade of W will be assigned for the current term (and previous term[s] if it's a multi-term course) and no tuition will be refunded.

Audits

Tuition will be assessed for audit and credit course registrations. All courses taken for audit must have the instructor's approval. Courses may not be changed from credit to audit or vice versa after the designated add/drop period.

Reporting of Grades

Instructors will submit final grades to the Office of Records and Registration within ten days after the conclusion of the term in which their courses are given. Once a final grade is awarded and entered on a student's transcript, the grade may not be altered for reasons other than error in the initial entry without the approval of the Committee on Academic Standards. In the event that this committee approves an alteration for reasons other than error, the original grade will be entered along with a comment regarding the circumstances that caused the change to be made.

The School of Public Health reserves the right to amend the above terms and conditions when in its sole judgment such changes are deemed necessary.

Current students are expected to view their grades periodically by logging onto Student Web Services, <https://registration.jhu.edu>.

TRANSCRIPTS

Students who want transcripts of their Johns Hopkins Bloomberg School of Public Health academic records or who want them forwarded elsewhere should submit a written request to the Office of Records and Registration at least seven days before the transcript is needed. In cases of extreme urgency, a rush order for a transcript may be requested. A fee of \$10.00 will be assessed for rush requests for transcripts to be picked up or sent by standard mail. A fee of \$15 will be assessed for rush requests to be sent via overnight mail. Rush request transcripts will be available the next business day. There is no charge for the first four copies of official transcripts per year; there is a nominal charge for additional copies. Partial transcripts of a student's record will not be issued. Official transcripts that were originally submitted as part of the student's application file may not be released to either the student or a third party.

Transcripts are normally issued only at the request of the student or with his or her consent. The only exception to this policy is the issuance of transcripts to offices and departments in the School. No charge is made under these circumstances.

GRADUATION

The graduation ceremony is held once annually. Diplomas bear the date of the University's annual Commencement exercises. It has been the practice in recent years to hold a convocation ceremony for the Johns Hopkins Bloomberg School of Public Health graduates in addition to the University-wide Commencement.

All financial obligations must be satisfied prior to graduation. Diplomas and transcripts will not be issued to those students who have outstanding account balances from any University office.

ACADEMIC ETHICS CODE

The faculty and students of the Johns Hopkins Bloomberg School of Public Health have the joint responsibility for maintaining the academic integrity and high standard of conduct of this institution. An ethical code is based upon the support of both faculty and students who must accept the responsibility to live honorably and to take action when necessary to safeguard the academic integrity of this University. Students enrolled in the Johns Hopkins Bloomberg School of Public Health assume an obligation to conduct themselves in a manner appropriate to the Johns Hopkins University's mission as an institution of higher education. A student is obligated to refrain from acts that he or she knows, or under the circumstances

has reason to know, impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating; plagiarism (including plagiarism from websites); knowingly furnishing false information to any agent of the University for inclusion in academic records; violation of the rights and welfare of animal or human subjects in research; misconduct as a member of either School or University committees or recognized groups or organizations.

1. All members of the academic community are responsible for the academic integrity of the University. Students and faculty alike must work together to minimize the possibility of violations of academic integrity.
2. The faculty is responsible for the conduct of examinations, for announcing the ground rules for all work in a course at the beginning of the quarter in which the course is offered, and for the security of examination papers and teaching laboratories. Proctoring is at the discretion of the instructor.
3. A student with knowledge of any violation of academic integrity governed by this Constitution has an obligation to report such violation, including the identity of the alleged violator(s), to the appropriate faculty member, one of the deans responsible for student affairs, or to the board. A student may not make a formal charge directly to the Academic Ethics Board. Formal charges to the Academic Ethics Board must be brought by the appropriate faculty member.

All members of the Johns Hopkins community are responsible for immediately informing the Academic Ethics Board of the Johns Hopkins Bloomberg School of Public Health of any suspected violations of its Constitution. The Ethics Board, composed of six students and four faculty members, is responsible for implementing its Constitution according to the procedures set forth therein. This includes formal hearings of suspected violations. Students and faculty should become familiar with the Constitution. Students are required to complete an online academic ethics module that reviews the Academic Ethics Code and provides case studies of academic ethics violations. To be approved for graduation, all students must complete this online module. In addition, students charged with violation of the Code must have all outstanding charges of misconduct and violations of academic ethics resolved in order to graduate. A complete copy of the academic ethics code is available from the office of the one of the deans responsible for student affairs, and may also be found in the Student Handbook.

STUDENT CONDUCT CODE

The faculty, staff, and students of the Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins University have the shared responsibility to conduct themselves in a manner that upholds the law and respects the rights of others.

The Student Conduct Code is based upon the support of faculty, staff, and students who must accept the responsibility to live honorably, to hold other members of the community to the same high standard of conduct, and to take action when necessary to safeguard the interests of the University and its community. Students enrolled in the Johns Hopkins Bloomberg School of Public Health assume an obligation to conduct themselves in a manner that upholds the law and respects the rights of others. They are responsible for maintaining the academic integrity of the institution and for preserving an environment conducive to the safe pursuit of the School's educational, research, and professional practice missions. This code begins on the day of first registration in the School and is enforceable until a degree has been conferred. It governs behavior by students that occurs on or off University property and is enforceable throughout the entire matriculation period, regardless of whether classes are in session or the student is enrolled in classes. The code also covers students who are not enrolled in a degree program but are enrolled in any educational course or program offered by the Johns Hopkins Bloomberg School of Public Health. The Conduct Code covers students of the Johns Hopkins Bloomberg School of Public Health even while participating in educational and research activities in other divisions of the University or in other institutions.

The Conduct Code is not intended to replace law enforcement or to provide non-Hopkins community members with a mechanism to redress personal grievances. Some acts of misconduct may also constitute violations of law. The University's policy is to cooperate fully with law enforcement authorities. Any disciplinary proceedings held by the University are independent of any criminal proceedings arising out of the same incident.

All students will be presumed to have knowledge of the provisions of this code as a consequence of enrollment in the Johns Hopkins Bloomberg School of Public Health. Lack of familiarity with the provisions of this code will not serve as a defense to any actions violating student conduct as defined by the code.

A complete copy of the student conduct code is available from the office of the one of the deans responsible for student affairs, and may also be found in the Student Handbook.

HUMAN SUBJECTS

The use of research subjects is an important aspect of responsible conduct of research. The Johns Hopkins Bloomberg School of Public Health is committed to protecting the rights and welfare of individuals participating as subjects in such studies. To meet this obligation, the School has two duly constituted standing committees (Institutional Review Boards) comprised of members of the faculty, student body, and the community. The Committees on Human Research 1 and 2 are responsible for reviewing protocols, including research methods, procedures, consent forms, and all other appropriate forms and survey instruments for all projects, regardless of funding or location, which involve the use of human subjects. It is the responsibility of students and faculty to make certain that clearance is obtained from the Committees on Human Research 1 and 2 before beginning any research involving human subjects. Exempt status for research must be certified by the Committees on Human Research 1 and 2. Participation as a human subject may not be required either explicitly or implicitly as a term or condition of a student's academic enrollment or progress.

Necessary forms for applications to the Committees on Human Research 1 and 2 (CHR1 and CHR2) may be obtained via the Office for Research Subjects, Room E2100, Wolfe Street Building. For additional information, call 410-955-3193.

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

Many faculty and students in the School do research involving animal subjects. The care and use of these subjects are regulated by the Animal Welfare Act, which is implemented by the U.S. Department of Agriculture. The University has one assurance with the federal government (the Office of Laboratory Animal Welfare [OLAW]) and, therefore, the University has one animal care and use committee (IACUC). Faculty from the School of Public Health, the School of Medicine, and the Homewood campus serve on this committee. All animal users must be registered with the Animal Surveillance Program in Occupational Health Services, located in Phipps 3E. The hours of operation are Monday through Friday, 7:30 a.m. through 3:00 p.m. The registration process takes less than 30 minutes. The ASP can be reached at 410-614-4129. An approved protocol MUST be obtained before animals can be purchased. Questions involving submissions of protocols to the IACUC should be addressed to Lisa Wetzelberger at 443-287-3739. An online internet training module is available

at <https://secure.lwservers.net/jhmrct/>. (Click on Courses, then select Animal Care and Use.) This training module must be completed by all animal users. Visit the Animal Care and Use Committee website at <http://www.jhu.edu/animalcare/>.

UNIVERSITY POLICY STATEMENTS

Campus Security Act

In keeping with the mandates of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, the University's annual report contains statistical compilations of reported crimes that occurred on campus, in certain off-campus buildings owned or controlled by the University, and on public property within or immediately adjacent to and accessible from the campus for the three most recent calendar years. Also included are campus security policies, including those related to alcohol and drug use, sexual assault, crime prevention, and reporting of crimes.

A printed copy of the annual crime report may be obtained from any campus director or Security Department or by stopping by the Homewood Campus at 14 Shriver Hall, or call 410-516-4600.

All Johns Hopkins faculty, staff, and students are encouraged to read and print out the report from <http://www.jhu.edu/~security> and report all criminal incidents promptly to their respective security department or other security authority.

Policy on Accommodation for Persons with Disabilities

Johns Hopkins University does not discriminate on the basis of gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, veteran status or other legally protected characteristic in any student program or activity administered by the University or with regard to admission or employment.

A person with a disability is defined by the Rehabilitation Act of 1973 and by the Americans with Disabilities Act of 1990 as an individual who has a physical or mental impairment that substantially limits one or more major life activities, has a record of such an impairment, or is regarded as having such an impairment. For faculty, staff, and students with disabilities it is important to provide to the University a comprehensive evaluation of a specific disability, from an appropriate qualified diagnostician, that identifies the disability, describes the current level of functioning in an academic or employment setting, and lists recommended accommodations. The University provides

appropriate, necessary, and reasonable accommodations in programs and facilities for those individuals who are qualified. This documentation should be submitted to Betty H. Addison, Director of Career Services and Disability Support, School of Public Health, 615 N. Wolfe Street, Suite E1002, Baltimore, Maryland 21205, 410-955-3034. Ms. Addison will submit the documentation to the Associate Director for Disability Services, Peggy Hayeslip, for review and determination of reasonable and appropriate accommodations. Depending on the accommodation, there may be a time delay before accommodations can be in place. It is important to make an appointment, or consult by phone, with the School's disability services coordinator at least two weeks prior to the start of the term to ensure that accommodations are provided in a timely manner. For questions and concerns regarding physical and programmatic access, specific campus accommodations, resolution of complaints and problems, faculty and staff concerns, and identification of other support services, please contact Peggy Hayeslip, Associate Director for Disability Services in the Office of Equal Opportunity and Affirmative Action Programs, 3400 North Charles Street, 130 Garland Hall, Homewood Campus. Phone: 410-516-8949, TTY: 410-516-6225.

Nondiscriminatory Policy as to Students

The Johns Hopkins University admits students of any race, color, gender, religion, national or ethnic origin, age, disability, marital status or veteran status to all of the rights, privileges, programs, benefits, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, veteran status or other legally protected characteristic in any program or activity, including the administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other University-administered programs or in employment. Accordingly, the University does not take into consideration personal factors that are irrelevant to the program involved.

Questions regarding access to programs following Title VI, Title IX, and Section 504 should be referred to the Office of Equal Opportunity and Affirmative Action Programs, 130 Garland Hall, 410-516-8075.

Policy on the Reserve Officer Training Corps. Present Department of Defense policy governing participation in University-based ROTC programs discriminates on the basis of sexual orientation. Such discrimination is inconsistent with the Johns Hopkins University nondiscrimination policy. Because ROTC is a valuable

component of the University that provides an opportunity for many students to afford a Hopkins education, to train for a career, and to become positive forces in the military, the University, after careful study, has continued its ROTC program but encourages a change in federal policy that brings it into conformity with the University's policy.

Photography and Film Rights Policy

The Johns Hopkins University reserves the right from time to time to film or take photographs of faculty, staff, and students engaged in teaching, research, clinical practices, and other activities, as well as casual and portrait photography or film. These photographs and films will be used in publications such as catalogs, posters, advertisements, recruitment and development materials, as well as on the University's website, for various videos, or for distribution to local, state, or national media for promotional purposes. Classes will be photographed only with the permission of the faculty member.

Such photographs and film—including digital media—which will be kept in the files and archive of The Johns Hopkins University, will remain available for use by the University without time limitations or restrictions. Faculty, students, and staff are made aware by virtue of this policy that the University reserves the right to alter photography and film for creative purposes. Faculty, students, and staff who do not want their photographs used in the manner(s) described in this policy statement should contact the Office of Communications and Public Affairs.

Faculty and students are advised that persons in public places are deemed by law to have no expectation of privacy and are subject to being photographed by third parties. The Johns Hopkins University has no control over the use of photographs or film taken by third parties, including without limitation the news media covering University activities.

Policy on Possession of Firearms on University Premises

The possession, wearing, carrying, transporting, or use of a firearm or pellet weapon is strictly forbidden on University premises. This prohibition also extends to any person who may have acquired a government-issued permit or license. Violation of this regulation will result in disciplinary action and sanctions up to and including expulsion, in the case of students, or termination of employment, in the case of faculty and staff. Disciplinary action for violations of this regulation will be the responsibility of the divisional student affairs officer, dean or director, or the vice president

for human resources, as may be appropriate, in accordance with applicable procedures. Any questions regarding this policy, including the granting of exceptions for law enforcement officers and for persons acting under the supervision of authorized University personnel, should be addressed to the appropriate chief campus security officer.

Privacy Rights of Students

The Johns Hopkins University complies with the provisions of the Family Educational Rights and Privacy Act of 1974 (Public Law 93-380) as amended (Public Law 93-568) and regulations promulgated thereunder. Eligible students, as defined in the regulations, have the right to inspect and review their education records, as defined in the regulations; to request the amendment of their education records if they are inaccurate, misleading, or otherwise in violation of the student's rights; to consent to the disclosures of personally identifiable information in their education records except to the extent permitted by law, regulation, or University policy; to file a complaint with the United States Department of Education if the University has failed to comply with the requirements of law or regulation. The University's policy on Family Educational Rights and Privacy is published periodically in the University Gazette. Copies of the policy are available from Student Academic Support Services (SASS) , and contained in the Student Handbook.

Policy on Alcohol and Drug Abuse and a Drug-Free Environment

The Johns Hopkins University recognizes that alcoholism and other drug addiction are illnesses that are not easily resolved by personal effort and may require professional assistance and treatment. Faculty, staff, and students with alcohol or other drug problems are encouraged to take advantage of the diagnostic, referral, counseling, and preventive services available through the University. Procedures have been developed to assure confidentiality of participation, program files, and medical records generated in the course of these services.

Substance or alcohol abuse does not excuse faculty, staff, or students from their employment or academic responsibilities. Individuals whose work or academic performance is impaired as the result of the use or abuse of alcohol or other drugs may be required to participate in an appropriate diagnostic evaluation and treatment plan. Further, use of alcohol or other drugs in situations off campus or removed from University activities that in any way impairs work performance is treated as misconduct on campus. Students are pro-

hibited from engaging in the unlawful possession, use, or distribution of alcohol or other drugs on University property or as a part of University activities.

It is the policy of the Johns Hopkins University that the unlawful manufacture, distribution, dispensation, possession, or use of controlled substances is prohibited on the University's property or as a part of University activities. Individuals who possess, use, manufacture, or illegally distribute drugs or controlled dangerous substances are subject to University disciplinary action, as well as possible referral for criminal prosecution. Such disciplinary action of faculty and staff may, in accordance with the University policy on alcohol abuse and maintenance of a drug-free workplace, range from a minimum of a three day suspension without pay to termination of University employment. Disciplinary action against students may include expulsion from School.

As a condition of employment, each faculty and staff member and student employee must agree to abide by the University Drug-Free Workplace Policy, and to notify the divisional human resources director of any criminal conviction related to drug activity in the workplace (which includes any location where one is in the performance of duties) within five (5) days after such conviction. If the individual is supported by a federal grant or contract, the University will notify the supporting government agency within ten (10) days after receiving notice.

University Policy on Award of Degrees

The University does not guarantee the award of a degree or a certificate of satisfactory completion for any course of study or training program to students enrolled in any instructional or training program. The award of degrees and certificates of satisfactory completion is conditional upon satisfaction of all current degree and instructional requirements at the time of such award; compliance with the University and divisional regulations; and satisfaction of faculty's bona fide expectations for the student's performance. No member of the faculty is obliged to provide students or graduates with an evaluation or letter of recommendation that does not accurately reflect that faculty member's true opinion and evaluation of academic performance and conduct.

Policy on Sexual Harassment

Preamble

The Johns Hopkins University is committed to providing its staff, faculty, and students the opportunity to pursue excellence in their academic and professional endeavors. This can only exist when each member of our community is assured an atmosphere of mutual

respect, one in which they are judged solely on criteria related to academic or job performance. The University is committed to providing such an environment, free from all forms of harassment and discrimination. Each member of the community is responsible for fostering mutual respect, for being familiar with this policy, and for refraining from conduct that violates this policy. Sexual harassment, whether between people of different sexes or the same sex, is defined to include, but is not limited to, unwelcome sexual advances, requests for sexual favors, and other behavior of a sexual nature when:

1. Submission to such conduct is made implicitly or explicitly a term or condition of an individual's employment or participation in an educational program
2. Submission to or rejection of such conduct by an individual is used as the basis for personnel decisions or for academic evaluation or advancement
3. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creates an intimidating, hostile, or offensive working or educational environment

Fundamental to the University's purpose is the free and open exchange of ideas. It is not, therefore, the University's purpose, in promulgating this policy to inhibit free speech or the free communication of ideas by members of the academic community.

Policy

The University will not tolerate sexual harassment—a form of discrimination, a violation of federal and state law, and a serious violation of University policy. In accordance with its educational mission, the University works to educate its community regarding sexual harassment.

The University encourages individuals to report incidents of sexual harassment and provides a network of confidential consultants by which individuals can report complaints of sexual harassment. The means by which complaints are resolved can range from informal to formal. The University encourages reporting of all perceived incidents of sexual harassment, regardless of who the alleged offender may be. Individuals who either believe they have become the victim of sexual harassment or have witnessed sexual harassment should discuss their concerns with any member of the Sexual Harassment Prevention and Resolution system. Complainants are assured that problems of this nature will be treated in a confidential manner, subject to the University's legal obligation to respond appropriately to any and all allegations of sexual harassment.

The University prohibits acts of reprisal against anyone involved in lodging a complaint of sexual harassment. Conversely, the University considers filing intentionally false reports of sexual harassment a violation of this policy.

The University will promptly respond to all complaints of sexual harassment. When necessary, the University will institute disciplinary proceedings against the offending individual, which may result in a range of sanctions, up to and including termination of University affiliation.

Complaints of sexual harassment may be brought to the heads of departments, the dean or director of a division, or to the University's Associate Director for Compliance and Conflict Resolution, Kevin G. McDonald, JD in the Office of Equal Opportunity and Affirmative Action Programs, 130 Garland Hall, Homewood Campus, Telephone: 410-516-8075, TTY: 410-516-6225.

Student Grievance Procedure

On occasion, disputes arise between students and other members of the School of Public Health community. The School encourages individuals involved in such disputes to resolve the matter directly between them. For those disputes that cannot be resolved informally, a Student Grievance Procedure has been created to provide students or student groups with a formal process to seek resolution of a grievance. A grievance covered by these procedures is a complaint by a student or group of students alleging that they have been adversely affected in their capacity as students.

Students may use this process to seek resolution to a situation in which they believe they have been harmed due to an arbitrary or capricious act, or failure to act, or a violation of a Johns Hopkins University or School of Public Health procedure or regulation by an instructor or other member of the faculty or School administrator or body.

Some conduct is governed by other policies in the School or by the University at large. As a result, the Student Grievance Procedure does not handle complaints or disputes that are governed by those policies.

Additionally, disputes that are personal in nature and do not involve the Grievant's academic activities are not covered by this policy. For specific complaints/disputes not covered by the policy, please consult the official Student Grievance Procedure document.

A complete copy of the Student Grievance Procedure is available on the Student Academic Support Services (SASS) website (www.jhsph.edu/Student_Life) or may be obtained from the Assistant Dean for Student Services in the SASS office, Suite E1002, Wolfe Street building.

Policy on Violence

The Johns Hopkins University is committed to providing a learning and working environment that is safe to all members of the University community. The University will not tolerate violent acts on its campuses, at off-campus locations administered by the University, or in its programs. This policy of “zero tolerance” extends not only to actual violent conduct but also to verbal threats and intimidation, whether by students, faculty, staff, or visitors to the University.

The University urges individuals who have experienced or witnessed incidents of violence to report them to Campus Security. Alternatively, students are urged to report concerns about violence to the divisional office responsible for student matters, faculty to the divisional office responsible for faculty matters, and staff to the applicable human resources offices.

Information regarding incidents of violent conduct and threats of violence will be investigated, and, if warranted, disciplinary action will be taken in accordance with applicable procedures. The University will notify law enforcement authorities of criminal conduct. In addition, the University may refer individuals accused of violations of this policy for an assessment of the likelihood that they will carry out violent acts. If the continued presence of an individual on campus threatens or disrupts the conduct of University business, the individual may be suspended from participation in University programs or activities pending the outcome of the assessment.

Individuals accused of engaging in incidents of campus violence may seek legal counsel at their own expense. Individuals and their attorneys are reminded that attorneys do not participate in any internal University hearing.

For addition information, please visit the University’s web site at www.jhu.edu.

Weather Emergency Policy

In the event of snow or other weather emergency, the provost of the University or his designee will decide whether and when to curtail operations of the University. The decision will be reported to the following radio and television stations:

In the Baltimore metropolitan area:

WBAL AM 1090

WPOC FM 93.1

WYPR FM 88.1

TV CHANNELS 2, 11, 13, and 45

In the Washington, D.C., metropolitan area:

WMAL AM 630

WTOP AM 1500 and FM 107.7

TV CHANNELS 4, 7, and 9, and News Channel 8 (cable)

More complete information concerning weather-related cancellations and delays is available by calling 410-516-7781 in the Baltimore area. Beyond the Baltimore area, call 800-548-9004. Information is available on the web at <http://webapps.jhu.edu/emergency/notifications/>. Classes canceled due to inclement weather may be rescheduled at the discretion of the instructor.

NOTICE OF USE OF STUDENT/EMPLOYEE IMAGES

Students and employees who are present in facilities operated by the Johns Hopkins Bloomberg School of Public Health (the School) are subject to having their images captured, such as by photograph, video, or electronic means. In addition to the use for security of personnel and facilities, the School reserves the right to use images of students and employees in their ordinary activities to promote the School. Such images may be used in paper brochures, electronic format on the internet, or other media. By your presence in these facilities you consent to capture of your image and use by the School.

Student Services and Organizations

STUDENT ACADEMIC SUPPORT SERVICES

Student Academic Support Services (SASS) is a comprehensive student affairs unit in the Johns Hopkins Bloomberg School of Public Health that provides advising to students, faculty, and staff on academic policies, financial support, and information management, and helps to create linkages between the academic mission of the School and public health careers. SASS brings together the functions of several offices to serve a student from the time of initial inquiry through graduation and beyond: Admissions, Career Services, Disability Support Services, InterAction Community Outreach, Records and Registration, Student Diversity, Student Financial Services, and SASS Operations. In addition, SASS offers two skills-based courses designed with practical tips to help students succeed at the School: English for Academic Purposes and Scientific Writing.

LIVING ACCOMMODATIONS

Reed Hall

The Johns Hopkins Medical Institutions provide residence hall living accommodations in the Lowell J. Reed Hall for single students or married students not accompanied by their spouses. This facility is located within easy walking distance of the Johns Hopkins Bloomberg School of Public Health. Reed Hall consists of two air-conditioned wings with a connecting lobby. The West Wing offers single rooms with a large community bath and shower on each floor. Building codes prohibit cooking in the West Wing rooms. The East Wing consists of 4-person and 8-person suites of rooms arranged with common living, kitchen, and bathroom areas with adjacent private bedrooms. In both wings room furnishings include bed, chest of drawers, desk and desk lamp, chair, bookshelves, and closet. Each West Wing room is furnished with carpet, study chair, and venetian blinds. The residents of both wings must provide their own bedding and towels. In addition, residents of the East Wing must provide dishes, silverware, and utensils. Other facilities in Reed Hall include a TV lounge, study lounges, vending concession area, self-service laundry, recreation room, and high-speed internet access. A recreational center is

located adjacent to Reed Hall. Membership to the Denton A. Cooley Center is free to all full-time degree students and full-time regular special students. Faculty, staff, fellows, spouses of students, and other students of the medical institutions may join for a yearly membership fee. The recreation complex includes a full-size gymnasium, indoor running track, racquetball courts, three outdoor lighted tennis courts, weight room, exercise areas, and locker rooms with saunas. An outdoor pool is available on a membership basis.

Reservations for room rentals must be made in advance of arrival. Single rooms are available from approximately \$330 to \$390 per month depending on size. Suites in the East Wing range from \$365 to \$380 per month per person. A one-month security deposit is required. Applications for on-campus housing will be mailed out by the Admissions Office to accepted applicants in the spring of the year. Information regarding off-campus housing can be obtained by writing to the Off-Campus Housing Office at Reed Hall, 1620 McElderry Street, Baltimore, MD 21205. The Off-Campus Housing Office provides students with listings of available housing accommodations throughout the city and county of Baltimore as well as printed information on apartment complexes, city bus routes, landlord tenant laws, Baltimore City schools and nursery schools, and furniture rental options. Maps and guides to Baltimore are also available through this office. Information on both on- and off-campus housing can be obtained at the following: www.hopkinsmedicine.org/housing.

RECREATIONAL AND CULTURAL OPPORTUNITIES

Baltimore is located in a region rich in American history and has historic and scenic attractions within easy reach. There are many cultural and recreational opportunities to enrich student life. It is a city of contrasts, mixing the old and the new. Baltimore ranks among the largest of the industrial and seaport cities.

Among the cultural resources are the Baltimore Museum of Art, which houses an outstanding collection of contemporary and classical painting and sculpture and features special exhibits, lectures, and art classes. One of the most important collections of art, tracing civilization from the ancient empires through the nineteenth century, can be found at the Walters Art Gallery.

The Johns Hopkins Medical Institutions and the University in general host a variety of art exhibits, performances, workshops, lectures, and film series. Many of these cultural programs are open to the general public as well as to students, faculty, and staff. The

University's Office of Special Events presents a free Wednesday Noon Series, and special student rates are available for ticketed events. In addition, students of the School are invited to attend film and lecture series presented by other local colleges.

For almost forty years, the Shriver Hall Concert Series has been Baltimore's premier classical music presenter. The series presents 8 to 10 concerts per season in the Shriver Auditorium, located on the Homewood campus, featuring the world's finest classical chamber ensembles and soloists. Regular and student subscriptions are available for the entire season. A special student rush ticket is offered one hour prior to each concert.

Different from the Shriver Hall Concert Series, but also based on the Homewood campus at Shriver Hall, is one of the area's leading community orchestras, Hopkins Symphony Orchestra. This talented pool of Hopkins students, faculty, and staff, as well as community members from as far away as Washington, D.C., and Virginia, practice and perform on the Homewood campus. Each year under the direction of internationally acclaimed Music Director Jed Gaylin, Hopkins Symphony presents four exciting symphonic concerts with world renowned guest soloists and three conducted chamber concerts. Discount tickets are available for all JHU affiliates, and Hopkins students are admitted for free with a valid student ID.

In addition, fine music is also available from the Peabody Conservatory of Music, the Baltimore Symphony Orchestra, and the Baltimore Civic Opera Company. Baltimore regularly attracts outstanding jazz, folk, and rock artists as well as the ballet. For those who enjoy the theater, Broadway shows are presented at the Mechanic Theater, and contemporary drama is produced by a resident company at Center Stage. The Harborplace is an exciting atmosphere, blending the National Aquarium, the Baltimore Convention Center, and many restaurants and unusual shops to create a fascinating and attractive environment. Shows, fairs, and ethnic festivals held throughout the year draw large crowds to the inner harbor area.

PARKING FACILITIES

The University has off-campus parking available by permit only. This parking is located southwest of campus near Baltimore/Broadway Streets and east of campus near Monument/Dean Streets. Free transportation is provided to and from the parking facilities by the University. For more information, contact the Support Services Office, 410-955-1197, or the Parking Office, 410-955-5333.

UNIVERSITY HEALTH SERVICES

Adult internal medicine and routine gynecological primary care is provided through the University Health Services (UHS) for full-time and part-time students and their spouses of the School of Public Health who elect the Student Health Program (SHP insurance). The health center is staffed by Hopkins faculty and junior faculty (clinical fellows) who are Board certified in Internal Medicine. Students are strongly advised to call ahead for an appointment. University Health Services is located on Carnegie 1, Room 136, in the hospital. Hours for appointment scheduling are from 8:00 a.m. to 4:30 p.m., Monday through Friday. There is 24-hour physician coverage from 5:00 p.m. until 8:30 a.m. weekdays, and throughout weekends and holidays. To make an appointment, call 410-955-3250. This number will give information during hours when the UHS is closed as well, but to reach the emergency after-hours answering service directly, call 410-955-4331. School of Public Health students not covered by the Student Health Program will not be seen at UHS for any reason, including emergencies. Emergency cases should use the Johns Hopkins Hospital Emergency Room. Information describing the services provided by the health center may be obtained at the Business Office or by reading the appropriate section in the Student Handbook, which is distributed at orientation. Questions regarding exact coverage may be answered by calling Mr. Darnell Williams at 410-955-3872 in the University Health Service Benefits and Billing Office, located at 144 Blalock Building, in the Johns Hopkins Hospital. Hours of operation: 8:30 a.m.–5:00 p.m.

JHMI DEPARTMENT OF STUDENT AND HOUSESTAFF SERVICES

The Department of Student and Housestaff Services, located on the first floor of Reed Hall, was developed to meet the recreational, social, and housing needs of students and housestaff associated with the Johns Hopkins Medical Institutions. The goals of this department are to work with students and housestaff to organize activities, sports events, forums, and other programs that stimulate student-to-student interaction, student-faculty interaction, and interchange among the schools and the hospital.

Tickets to a number of events in the Baltimore/Washington area are available each month at special rates for students. Social events, informal classes, movies, trips and ticket sales are sponsored by the Student Activities Office.

JHMI INTERNATIONAL SOCIETY

The JHMI International Society was founded in 1959 to assist the international visitor in establishing social acquaintances and to provide programs for cultural, social, and educational exchange. Activities include a welcome reception, social gatherings, tours to nearby places of interest, a newsletter of JHMI and Baltimore activities, a hospitality program, and referral to English language instruction.

OFFICE OF INTERNATIONAL SERVICES

The Office of International Services serves noncitizens who come to study and work at JHMI. It is a University office staffed by University employees who perform a variety of functions to assist international visitors in obtaining and maintaining legal status while present in the U.S.

The office sponsors visiting faculty, postdoctoral fellows, house officers, nurses, degree candidates, and other persons with a bona fide University or Hospital affiliation. In addition to assisting the noncitizen in dealing with the Department of Homeland Security, the U.S. State Department, the U.S. Department of Labor, the office houses the Johns Hopkins International Society, which provides services to assist internationals with social and cultural adjustment.

All foreign students, fellows, and visiting scholars of the medical institutions, regardless of sponsorship, and whether immigrant or nonimmigrant, are required upon arrival at Hopkins to visit the JHMI Office of International Services to provide the necessary passport and visa information vital to the records of the university. The office is located directly across from the hospital at 1620 McElderry Street on the first floor of Reed Hall. The Office of International Services, which is comparable to the foreign student advisor offices found on many university campuses, acts as liaison between Hopkins and various embassies and government agencies. Once having seen a student's credentials, the office can advise a student accordingly on issues such as legal status, extension of legal status, travel, visa revalidation, employment, payroll clearance, and dependent information.

A representative from the Office of International Services will be at the Johns Hopkins Bloomberg School of Public Health during orientation and will be able to review travel documents and answer questions at that time.

Registration in the Johns Hopkins Bloomberg School of Public Health is not considered complete until the Office of International Services has documented a student's legal status in the United States.

CAREER DEVELOPMENT

The Career Services Office provides career planning and job search assistance to all students of the School. Seminars, forums, video tapes, and individual counseling sessions are provided to aid students in focusing their career objectives, developing resumés, and embarking on job searches. A career resource library, which includes many resource books, is a useful tool for job seekers. eRecruiting, an electronic career management system, is utilized to assist students in their job search. Students are able to logon 24 hours per day to search for jobs using this global system, upload resumés, cover letters, and other job search materials. A career fair is held during the third term to introduce students to public health personnel in the field. Other services include frequent email postings of positions and internships available, several alumni panels during the academic year, information about public health agencies and the services they provide as well as on-site interviewing. In addition, a two-day soup-to-nuts career course is offered during the winter intersession.

STUDENT GOVERNMENT

The Student Assembly is the annually elected student governing body of the Johns Hopkins Bloomberg School of Public Health. It serves as a focus for student concerns and activities at the School and represents student views and interests to the administration and faculty. Students have developed an increasingly important voice in School affairs through their participation in School committees.

Accomplishments of the Student Assembly include publication of a quarterly student newsletter and sponsorship of seminars and community outreach projects. The Student Assembly also hosts several social events throughout the year, including a Harbor Cruise and the annual Winter Gala.

DEANS FOR STUDENTS NETWORK

The Deans for Students Network (DFSN) facilitates clear pathways of communication among the deans and individual students and the student body at large. The purposes of the network are the following:

- to facilitate student access to the services of the deans for student affairs
- to improve communication between/among deans and students
- to promote a positive, supportive, and culturally sensitive atmosphere in dean/students relationships
- to provide a forum for deans to communicate and assess their student-related activities

- to develop, revise, and communicate problem-solving algorithms to meet the changing needs of the student body
- to translate student needs into institution wide policies and guidelines for which the DFSN will serve as advocates to the administration, the Student Assembly, and the student body

The responsibilities and activities of the DFSN are currently shared among Robert Hradsky, assistant dean for student services; Robin Fox, assistant dean for academic affairs; Sharon Krag, associate dean for graduate education and research; Robert Lawrence, associate dean for professional practice and programs; and James Yager, senior associate dean for academic affairs, with input from and collaboration with student members to the network.

THE MULTICULTURAL STUDENT ALLIANCE

The Multicultural Student Alliance (MISA) is an independent student organization. Its motto is “World Students for Health and Justice.” One of its purposes is to provide a support group for students and faculty at the Johns Hopkins Bloomberg School of Public Health who represent underserved populations in America or abroad. In recent years, MISA has been striving to expose all students to the rich and varied cultures represented by different members of the Johns Hopkins Bloomberg School of Public Health community. MISA also seeks to address issues of concern to health professionals who serve African-American, Asian-American, Hispanic-American, American Indian, and other disadvantaged peoples and communities throughout the world. These issues are addressed through a variety of activities, which include:

1. Academic and administrative assistance to its members
2. Educational programs outside the regular curriculum that promote cultural and political awareness
3. Advocacy for a curriculum that addresses the issues important to communities underserved in regards to health promotion, protection, disease prevention, and medical care
4. Promotion of policies that enhance the recruitment and retention of students and faculty at the School who represent underserved populations
5. Provision of a network for professional advancement through internships, fellowships, special studies, field placement, research, employment, and affiliation opportunities
6. Presentations and other events that increase awareness of the history, music, food, and art experiences as well as other aspects of the many cultures represented in the School community
7. Community activities that put public health principles into practice

The members of MISA include all students, staff, and faculty interested in its purposes and activities. People with different ethnic, cultural, and social experiences are especially encouraged to participate in and help enhance multicultural alliances, and promote mutual understanding, appreciation, respect, health, and justice for all, through activities evolving from the School community.

DELTA OMEGA PUBLIC HEALTH HONOR SOCIETY, ALPHA CHAPTER

Established in 1924 at the School of Public Health, Delta Omega recognizes outstanding achievement in the field of public health. The society encourages scholarship and research among students undertaking graduate study in public health. The annual election of students, faculty, and alumni to membership in the society is based upon outstanding achievements and contributions to the field of public health. For more information, contact Kristin Off, Delta Omega coordinator, the Johns Hopkins Bloomberg School of Public Health, 615 N. Wolfe Street, Room W1600, Baltimore, MD 21205-2179; 410-955-5194; email: koff@jhsph.edu or visit the School's website at www.jhsph.edu.

SOCIETY OF ALUMNI

The Society of Alumni is a professional organization of graduates of the Johns Hopkins Bloomberg School of Public Health. Dedicated to providing fellowship, networking, continuing education, and strengthening alumni ties to the School, the society is represented worldwide by regional public health chapters. Alumni working worldwide in every facet of the profession are available to network with students and fellow alumni. For more information, contact Ms. Ricky Fine, executive director, Society of Alumni, the Johns Hopkins Bloomberg School of Public Health, 615 N. Wolfe Street, Room W1600, Baltimore, MD 21205-2179; 410-955-5194; email: rfine@jhsph.edu, or visit the School's website at www.jhsph.edu.

Financial Assistance

The Student Financial Services Office administers all student loan programs plus the Federal Work-Study program at the School. In addition to determining a student's eligibility for loan assistance and work-study, the Student Financial Services Office provides personal and confidential financial counseling to all aid applicants. It is important for prospective students to note that the decision to offer or deny financial aid is totally separate from the decision to offer or deny admission.

Eligibility for financial assistance is based on a combination of factors such as financial need, merit, and availability of funds. For need-based loans and work-study, financial need is determined by using a standardized formula, established by law, which calculates an Expected Family Contribution (EFC) for the student. The EFC amount is used to compute a student's eligibility for Federal Student Aid. To receive Federal Student Aid, an applicant must:

1. Be officially accepted as a regular student
2. Be enrolled for the appropriate credits per term
3. Maintain satisfactory academic progress
4. Be a U.S. citizen or eligible non-citizen and have a valid Social Security Number
5. Not be in default on a federal student loan
6. Register with the Selective Service, if required

Financial aid regulations stipulate that an aid recipient must maintain satisfactory academic progress. Failure to maintain satisfactory academic progress may result in the cancellation of a student's eligibility to receive additional financial aid. Also, a change in the student's enrollment, funding, or financial status may affect his or her eligibility to receive or retain financial aid.

When a student withdraws within an academic term, the student's eligibility to retain financial aid will be recalculated to cover the enrollment period for which the student did maintain eligibility.

Each department at the School administers their own academic scholarship program. Therefore, students should contact the department of their major interest and request specific information about departmental scholarship opportunities.

FELLOWSHIPS, SCHOLARSHIPS, AND TRAINEESHIPS

General Information and Method of Application

A variety of fellowships, scholarships, and traineeships are funded by the federal government, the private sector, and the Johns Hopkins Bloomberg School of Public Health. Fellowship or traineeship support from the Public Health Service and other agencies of the U.S. government is usually limited by law to citizens and permanent residents of the United States. This support may be for specific or general areas of study. Departmental scholarship aid is awarded by the departmental chairperson; requests for scholarship aid should be submitted directly to the appropriate academic department. Master of Public Health (MPH) scholarships are awarded by the MPH program office. Individuals who apply to the MPH program are automatically considered for scholarship assistance by the MPH office.

Public Health Traineeship Grant

These traineeships (tuition support) are for students in professional degree programs in the following specialized under-represented topic areas: Epidemiology; Environmental Health; Biostatistics; Toxicology; Nutrition; Maternal and Child Health; and Health Care Delivery Systems. Students who comply with established criteria are identified and selected by a School Committee based on their academic qualifications. Students may not apply for support from this grant.

Departmental Scholarships

Many departments offer financial support, that includes stipends, insurance, tuition, and fees. The amount and type of this assistance varies and specific departments may only offer tuition support to students. For additional information about departmental funding, degree candidates should contact the chairperson of the department to which they intend to apply.

Master's Tuition Scholarships (MTS) for Master of Science and Master of Health Science Candidates.

Master's Tuition Scholarships worth up to 75% of the School's tuition are available to eligible ScM and MHS students following the successful completion of

64 academic credits. A scholarship award of less than 75% of tuition will be made when some other form of tuition support is available to the student. Receipt of an MTS is limited to four (4) academic terms. Candidates for the MTS are recommended by their departments. Students should contact their departments or the Student Financial Services Office for eligibility criteria.

Graduate Fellowship for Nurse-Midwives

The Graduate Fellowship for Nurse-Midwives in Population and Family Health Sciences provides an opportunity for a nurse-midwife to train at the doctoral level in preparation for a professional role in research, education, and service. In establishing this fellowship, the Department of Population and Family Health Sciences continues its historical association with midwifery education at the graduate level and reemphasizes the important role nurse-midwifery has to play in maternal and child health.

Student Funding Resources

The primary responsibility of Student Funding Resources is to assist students and faculty in the identification of and application for grant opportunities. The time frame for receiving funding will vary from a few months to a year, depending on the specific opportunity. Therefore, it is important to plan ahead and allow ample preparation time for your funding application. Additional information about specific funding opportunities and the application process is available from the School's website at www.jhsph.edu/SFR/.

Predoctoral and Dissertation Fellowships—The National Institutes of Health, the Howard Hughes Medical Institute, and the Ford Foundation are examples of the agencies that support programs for predoctoral graduate study in research-based doctoral programs in basic and/or applied disciplines. Inquiries should be directed to the Office of Student Funding Resources, room W2025.

Postdoctoral and Special Fellowships—These fellowships are awarded on an individual basis directly to candidates in health-related sciences from various governmental and private sector agencies. The Student Funding Resources Office is available to assist Postdoctoral Fellows with funding inquiries.

State Aid—Generally, state aid comes from the student's state of legal residence. Students should contact their state student aid agency for information about grant and scholarship assistance.

Research Awards

Opportunities for support from various research sources are usually available within most departments. For further information, candidates should contact the chairperson from the department to which they intend to apply.

FEDERAL STUDENT LOANS AND FEDERAL WORK-STUDY

General Information and Method of Application

A student must have a complete financial aid file in order to receive consideration for Federal Student Aid. Financial aid information is available on the School's website at www.jhsph.edu/student_life/financial. For priority consideration, applications should be submitted by April 15.

Student Loans

To be eligible to receive a federal student loan, a student must be enrolled in a degree program on at least a half-time basis; be a U.S. citizen or eligible non-citizen; be maintaining satisfactory academic progress; not owe a refund on a federal grant or be in default on a federal student loan; be registered with the Selective Service (if required); and have a valid social security number. Persons who are in this country on a student or visitor visa are not eligible for federal student loans.

1. ***Federal Direct Student Loans***—Federal Direct Loans allow students to borrow money from the federal government to pay for educational expenses. Under the Direct Loan Program, the U.S. Department of Education makes loans, through schools, directly to students. Direct Loans simplify the loan application process and eliminate the need for an outside lender, such as a bank or credit union. Direct Loans are either subsidized or unsubsidized.
 - A. Federal Direct Subsidized Loans are awarded on the basis of financial need. The federal government will pay the interest on the loan while the student is in school and during specified deferment periods.
 - B. Federal Direct Unsubsidized Loans are not awarded on the basis of need. The student will be charged interest from the time the loan is disbursed until it is paid in full.

The interest rate for Direct Loans is variable, that is, the rate is adjusted each year. The maximum rate for a Direct Loan is 8.25%. All Direct Loan borrowers are charged an origination fee of 3%. Upon entering repayment, the borrower will always make payments to the same Direct Loan servicer. Direct Loans will not be resold.

2. **Federal Perkins Loan**—A Perkins Loan is a low-interest (5%) loan for students with exceptional financial need. The School is the lender and the loan is made with government funds.

OTHER LOAN FUNDS—Several alternative educational loan programs are offered by private lending institutions. These loans are credit-based, are not subject to the Federal Need Analysis Methodology, and may be used to supplement other forms of financial assistance.

Federal Work-Study Program

The purpose of the Federal Work-Study Program is to stimulate and promote the part-time employment of students who are in need of these earnings to meet the cost of postsecondary education. Also, this program encourages eligible students to participate in community service activities that will benefit the nation and engender in the students a sense of social responsibility. A student's earnings during an academic year are limited by the student's demonstrated financial need and the availability of program funds. Federal Work-Study positions are assigned on a first-come, first-served basis.

VETERANS' BENEFITS

The University (serving as a liaison to the Veterans Administration) makes provisions for individuals who wish to continue their education under the laws pertaining to veterans' educational benefits. Students may apply to the Veterans Administration for education benefits after being accepted for admission. Students must state the same educational objective in making application both to the School and to the Veterans Administration. Students are required to pay the usual fees to the School at the time of registration. Additional information regarding veterans' benefits may be obtained from the Student Financial Services Office.

FOREIGN STUDENTS

Financial Certification

Applicants for admission from other countries should arrange for their funding as soon as they apply for admission. Students typically are informed of the scholarship awards from the School at the time of admission. **If you have not been formally awarded a scholarship at the time of admission, it is highly unlikely that you will receive a scholarship after arrival at the University. The University has no mechanism for tuition waivers.**

Foreign students using their own source of support should be prepared to show clear documentation as to how they will support themselves for tuition and living expenses during their entire program. The School must receive official certification from the sponsor of the source and amount of financial support (tuition and living expenses) before the Certificate of Eligibility (I-20 form or IAP-66 form) needed to obtain a visa can be issued to an accepted international student. Those candidates intending to support themselves from personal funds must provide a letter from a bank in the United States indicating that sufficient funds are on deposit to cover tuition and living expenses for the first year of the program.

Financial Assistance

Financial assistance for international students who are not permanent residents of the United States is extremely limited. Most international students coming to the School are supported by their governments or private health organizations. Departmental and MPH scholarships for international students are limited. Students should contact the department to which they intend to apply for information regarding their eligibility for scholarship assistance.

SCHOOL OF PUBLIC HEALTH SCHOLARSHIPS AND AWARDS

Students registered full-time in the School are eligible for consideration for various scholarships, research fellowships, and awards. All students are advised to review the bulletin boards and the Student Funding Resources website (located within the School's website at www.jhsph.edu) for scholarship announcements. Detailed information is available through the Director of Graduate Education or the Committee on Honors and Awards. Awards made available through the School or departments include:

Helen Abbey Fund—This award provides support for a second-year (and later) doctoral candidate in biostatistics who has a commitment to teaching.

Aoyama-Kita Scholarship—This fund will provide scholarship support to public health physicians from Japan, Korea, and Malaysia who will pursue careers in public health practice in those countries, and/or who demonstrate an avid research interest in public health issues affecting those countries.

Frederik B. Bang Award for Outstanding Student Research—This award recognizes students who are engaged in doctoral research in a topic relevant to pathobiology.

The A. Ralph and Sylvia E. Barr Fellowship in Vector Biology—This fund supports a doctoral or post-doctoral student in the W. Harry Feinstone Department of Molecular Microbiology and Immunology working with vectors of infectious diseases in their natural habitats.

Randy E. Bass Award—This award goes to a student focusing on occupational medicine.

J. Howard Beard Award—This award supports beginning masters of public health students who are graduates of the Johns Hopkins School of Medicine or enrolled in the joint MD/MPH program.

Marilyn Bergner Endowment in Health Services Research—This award is provided to a continuing doctoral student working in the area of health services research in the Department of Health Policy and Management.

The Henry K. and Lola Beye Scholarship—This scholarship is awarded to advanced level, physician doctoral students in the Department of International Health who have an interest in Tropical Medicine.

Eleanor A. Bliss Fund—This fund provides support for Ph.D. students in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

Miriam E. Brailey Fund—The fund supports graduate training and research in Epidemiology.

Trudy Bush Fund—This fund supports students pursuing a MHS degree in the Department of Epidemiology with a specialization in women's health.

Otis and Calista Causey Fellowship in Immunology—This fellowship recognizes outstanding Ph.D. students in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

Bacon Field Chow Scholarship—This fund provides support to outstanding doctoral students working in the area of human nutrition research.

Clements-Mann Fellowship Fund in Vaccine Sciences—This fund supports outstanding graduate students in the Department of International Health whose studies are focused in vaccine sciences.

Ruth B. and J. Douglas Colman Scholarship—This fund provides support to an outstanding student in the general preventive medicine residency program whose focus is on health policy.

Jean Coombs Fund—This award funds doctoral dissertation research by students in the Department of Epidemiology, concerning cancer research or childhood diseases.

Donald A. Cornely Scholarship Fund—This fund provides support for a doctoral student in the Department of Population and Family Health Sciences whose research has application for the practice of maternal and child health.

Frances A. Coventry Fund—Income from this Fund provides support for outstanding Bloomberg School of Public Health students.

June Culley Award—This award provides support for doctoral students in the Departments of Biostatistics and Health Policy and Management.

Edward J. Dehne Award—This award supports doctoral students working in the area of reproductive health and family planning in the Department of Population and Family Health Sciences.

Louis I. Dublin and Thomas D. Dublin Fund for the Advancement of Epidemiology and Biostatistics—This fund supports graduate student education at the interface of Biostatistics and Epidemiology.

Robert Dyar Award—This award supports a graduate student seeking an M.D. in the Department of Epidemiology.

Jane and Steve Dykacz Endowment Fund in Medical Statistics—In 2004 this award will be granted to a student in the Department of Biostatistics for the best paper in Medical Statistics.

Endowed Student Support Fund—This fund will support students undertaking research projects on injury control or population control in low income countries with preference given to China, India, and Indonesia.

Environmental Health Engineering Student Development Fund—This fund supports student development, educational goals and objectives for the Division of Environmental Engineering.

The Eskridge Family Student Support Fund for International Students—This fund provides support to an outstanding international student

Fellowship in Family Planning and Reproductive Health—This fund will support graduate students or post doctoral fellows in The Department of Population and Family Health Sciences working in the area of family planning and reproductive health.

The Charlotte Ferencz Scholarship in the Department of Epidemiology—This fund supports students in the Department of Epidemiology whose research projects focus on birth defects, with preference given to projects related to the etiology of congenital heart disease.

Charles Flagle Award—This award is given to doctoral students in the Department of Health Policy and Management whose work is in the area of health services research, including technology assessment and medical informatics.

Ruth B. Freeman Award—This annual award recognizes academic performance and an outstanding thesis of a graduating or continuing nurse doctoral student.

Martin Frobisher Fellowship Fund—This fund provides support for doctoral students in the Department of Molecular Microbiology and Immunology.

The Pearl & Jeremiah German Scholarship in Gerontology—Income from this fund will be used to provide tuition assistance and/or stipend support to doctoral students in the Department of Health Policy and Management with a declared interest in gerontology.

General Preventive Medicine Residency Fund—This fund provides tuition and stipend support for outstanding first year general preventive medicine residents.

The Alice J. Gifford Fund—This fund supports graduate education for nurses in occupational and environmental health and related research conducted by nurses at the School.

GaxoSmithKline Preventive Medicine Residency Scholarship—The scholarship provides support to an outstanding first year general preventive medicine resident.

Howard C. and Jane R. Goodman Award—The fund provides tuition support for an MPH student.

William Haddon, Jr. Fellowship in Injury Prevention—This fellowship provides support to a new or continuing doctoral student in the Department of Health Policy and Management, working in the area of injury control and prevention.

Harold and Sylvia Halpert Endowment Fund—This fund provides support to students in the Department of Mental Health in recognition of both past achievement and promise of future contributions in their fields.

Bettylee Hampil Fellowship—This fellowship supports a doctoral student in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

C. Esther and Paul A. Harper Award—This annual award is available to graduating doctoral students in the Department of Population and Family Health Sciences whose research focuses on population issues, and students studying maternal and child health whose academic performance has been judged outstanding.

Health Policy and Management Endowed Fellowship Fund—This fund provides tuition support to incoming doctoral students in the Department of Health Policy and Management.

Hegner, Cort, Root Memorial Scholarship—This scholarship supports a doctoral candidate in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

Diana Hess Memorial Fund—This fund provides support to an M.H.S. student in the Department of International Health preparing to do field work, with preference given to those students working in Africa.

Lillian Hiss/Ethel Crosby Scholarship—This scholarship provides support to students with a nursing degree, based on academic achievement and financial need.

The Sibley and Catherine Hoobler Award for Excellence in Public Health and Medicine—This awarded is given to students pursuing studies in both the Johns Hopkins Bloomberg School of Public Health and the School of Medicine.

John C. Hume Doctoral Award—This award provides support to a continuing doctoral student in Health Policy and Management.

John C. Hume MPH Award—This award is made to a Master of Public Health student for academic excellence and professional promise.

Nancy Stephens International Health Fund—This fund provides small grants to assist master or doctoral students in the Department of International Health who are within two terms of anticipated graduation.

Elsa Orent Keiles Fellowship in Biochemistry and Human Nutrition in International Health—This fellowship provides tuition support for graduate students with demonstrated financial need in the Department of Biochemistry and Molecular Biology and the Division of Human Nutrition in the Department of International Health.

Josephine Kohn and Family Fund—This fund provides support to incoming or continuing international doctoral students in the Department of Population and Family Health Sciences whose focus is on family planning and reproductive health, and who intend to return to their home country.

Morton Kramer Fund for the Application of Biostatistics and Epidemiology in Research on the Prevention and Control of Mental Disorders—This fund provides an annual award to an outstanding doctoral student in the Department of Mental Health who has demonstrated excellence in application of biostatistical and epidemiological methods to the solution of problems in research dedicated to advancing our knowledge of the epidemiology and prevention of mental disorders.

Cornelius W. Kruse Award—This award is presented to a doctoral student for scholarly achievement and an outstanding dissertation in the division of Environmental Health Engineering.

Harry D. Kruse Award—This award is presented annually to a continuing full-time student who has demonstrated outstanding academic performance and professional potential in the field of nutrition and public health.

The Dr. Harry J. Lawler Award—This fund provides support to an outstanding student in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

The Cynthia and Robert Lawrence Scholarship—This fund provides scholarship support to a student whose public health interests have a direct bearing on the priorities of the Center for a Livable Future.

Paul Lemkau Fund—This award is given to a Department of Mental Health student who has made a significant difference in the community life of the department.

Carol Eliasberg Martin Scholarship in Cancer Prevention—This fund provides annual support to an outstanding doctoral student or postdoctoral fellow whose work holds promise for preventing cancers that affect women, with a focus on breast and ovarian cancer.

Margaret Merrell Fund—This fund provides support for students in the Department of Biostatistics in recognition of excellence in research.

Mary B. Meyer Fellowship—This fellowship supports up to three doctoral or postdoctoral students in Epidemiology whose research focuses on the epidemiology of reproduction and infant/child health.

The Harvey Meyerhoff Scholarship in Cancer Prevention—Income from this fund will provide fellowship support to students in the Department of Epidemiology whose focus is in cancer prevention.

Janice Eddy Mickey Scholarship Fund—This fund supports students who plan to devote their lives to improving health and human rights worldwide.

Minority Health Award—This award is given to students with a demonstrated commitment to minority health issues.

Dr. and Mrs. Roscoe M. Moore, Jr. Scholarship in the Department of Epidemiology—This fund will support a doctoral student in the Department of Epidemiology, with preference given to graduates of historically black colleges and universities.

Morgan-James Scholarship Fund—This fund supports an outstanding student pursuing a graduate degree in the Department of Environmental Health, whose interest is radiation health sciences.

Lisa L. Paine Graduate Fellowship in Nurse-Midwifery—This fellowship honors and supports experienced nurse-midwives seeking a graduate degree in the Department of Population and Family Health Sciences to better fulfill the widening public health role for maternal and child health research, education, and service.

John and Alice Chenaveth Pate Fellowship—The fund supports a woman doctoral student in the Department of Population and Family Health Sciences.

The Marcia G. Pines Award in Bioethics and Public Health—This award is given annually for the best student paper in bioethics and public health.

The David Paton Scholarship in Preventive Medicine—This scholarship provides support to a general preventive medicine resident at the Johns Hopkins Bloomberg School of Public Health.

Harry J. Prebluda Fellowship—This fund provides fellowship support for outstanding students in the field of nutritional biochemistry.

Procter & Gamble Fellowships—Income from this fund will support masters, doctoral and post-doctoral students who are committed to advancing the health and well being of women and children through clean water and improved nutrition.

Ruth Rice Puffer Fund for International Student Support—The fund supports a masters or doctoral student studying at the School who is not a United States citizen.

Victor Raymond Memorial Endowment in Public Policy Development—This endowment provides scholarship funds to a continuing doctoral student in the Department of Health Policy and Management whose work has relevance at the national and/or state level.

Refugee Health Training Fund—This award is given to students on leave from relief organizations who wish to strengthen their expertise in providing health care to refugees and other displaced persons.

The Dr. Lloyd and Mae Rozeboom Scholarship—This fund supports students in W. Harry Feinstone Department of Molecular Microbiology and Immunology who are studying medical entomology/vector biology.

Carl Swan Shultz Fellowship Award—This award is presented to an outstanding doctoral student in the Department of Population and Family Health Sciences whose work focuses on reproductive health, family planning, demography, or reproductive biology.

The R. Bradley Sack Family Scholarship Award—This fund supports outstanding doctoral students studying infectious disease programs in the developing world.

The Jean and Sidney Silber Fund in Population and Family Health Sciences—This fund will provide a stipend to a student at the Center for Adolescent Health Promotion and Disease Prevention interning and/or working on a research project in partnership with a community organization.

Charlotte Silverman Fund—This fund supports students and/or junior faculty in the Department of Epidemiology whose focus is on epidemiology and policy.

Johns Paul Stapp Endowed Scholarship—Income from this fund will support students whose research and study focus on aviation safety, highway safety, or biomechanics.

Ernest Lyman and Helen Ross Stebbins Scholarship—This scholarship is awarded on the basis of academic achievement, scholarship, field experience, and ambitions in public health professional practice.

David Leslie Swift Fund in Environmental Health Engineering—This fund supports masters, doctoral and postdoctoral students from the Division of Environment Health Engineering.

Student Support Fund in Epidemiology—Income from this fund will support students in the Department of Epidemiology.

Mary & Carl E. Taylor Fund—provides support to a student working in the area of international bioethics.

Kann Trowbridge Fund—This fund provides fellowship support to a U.S. doctoral student in the Department of Population and Family Health Sciences who has demonstrated outstanding academic achievement and is committed to promoting national efforts in family planning and reproductive health.

Watt/Hansell Endowment—Established to bring a public health perspective to medical education, this endowment provides tuition support to Hopkins medical students who wish to pursue public health training and vice versa.

Katharine E. Welsh Fellowship—This award provides fellowship support for outstanding students in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

The William Endowment for Excellence in Science—The fund is awarded to a doctoral student from the Departments of Health Policy and Management or Population and Family Health Sciences for outstanding research in the area of health policy and management for women and children.

The Ruth G. Wittler Student Scholarship Fund—This fund provides support to students working in the laboratory sciences in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

Robert D. and Helen S. Wright Fellowship—This fellowship is presented to continuing doctoral students in the Department of International Health, who expect to contribute to the improvement of health in Africa, particularly Nigeria.

John P. Young Memorial Prize—This award provides support to an incoming student in the MHS program in health finance and management in Health Policy and Management.

Tuition and Fees

TUITION

Tuition for the 2004–2005 academic year for full-time enrollment for a four-term, nine-month academic year is \$29,616. Tuition for the 2004–2005 academic year for the eleven-month, full-time MPH program is \$37,020. For students granted permission to pursue a degree program for an extended period of time, tuition is charged on a per-credit basis. For the 2004–2005 academic year, the charge is \$617 per credit. Information regarding these charges can be obtained from the Records and Registration Office. Fees for audited courses are based on the number of units as if the course were taken for credit. Tuition for postdoctoral students is \$800 for the four-term academic year or \$1000 for five-term periods, which include the summer term. For special students, tuition is assessed for courses taken in accordance with the established schedule of fees per credit unit.

Schedule of Payments

Payment due dates for summer term through 4th term are as follows:

- Summer–July 30, 2004
- 1st Term–September 30, 2004
- 2nd Term–November 30, 2004
- 3rd Term–February 28 2005
- 4th Term–April 29, 2005

Electronic statements are posted on the web each month on the 16th. Payments are due for each statement on the last business day of that month. A document from an organization stating its intention to financially support the student will be accepted as payment at the discretion of the Student Accounts Office. Tuition and related fees may also be paid by cash, check, Discover, MasterCard, or Visa.

Refund Policy

Students receive a 100% tuition refund for any withdrawals made prior to the end of the add/drop period; however, **there is no tuition refund after the add/drop period.** This policy applies to complete registration withdrawals as well as individual course withdrawal. During weeks three and four of the term, students who receive federal student financial aid must consult with the Student Financial Services Office prior to any withdrawals from the School.

FEES

Matriculation Fee

All new degree candidates entering academic year 2004–2005 either full-time or part-time will be assessed a one-time matriculation fee of \$500. The fee is designed to offset costs associated with registration, record keeping, and graduation, including diploma printing.

Activity Fee

All new degree candidates, with the exception of distance education students, will be assessed a one-time activity fee of \$40.

Late Registration Fee

A fee of \$50 is assessed without exception for registering and changing courses after the specified registration and add/drop periods for each academic term, including summer.

Late Payment Fee

A fee of \$50 is assessed without exception for self-payment portions of tuition paid after the payment due date for each term. Fees associated with delinquent accounts sent to collections will be passed on to the student.

Transcript Rush Order Fee

Transcripts should be ordered at least seven working days before they are needed. In cases of extreme urgency, a rush order for a transcript may be requested; a fee of \$16.00 will be assessed, and the transcript will be available the next business day.

Returned Check Fee

A fee of \$25 is assessed without exception for any check returned to the School by a banking institution. The University reserves the right to not accept future payments by personal checks from any student once a fee has been assessed.

Course Materials Fee

Some courses have mandatory fees to cover the cost of reproducing instructional materials for those courses. These fees are listed on the course schedules for each term and will be charged to your student account.

Nonresident Fee

For nonresident students, an assessment of fifteen percent of full tuition is made for registration of each academic term during which a student elects to be on nonresident status, until the term in which all degree requirements are completed or there has been a change in status. Should the student return to resident status in any remaining academic term, any nonresident fee paid for that term will be applied to the full term's tuition charge. Upon return to resident status during the academic term in which the degree will be conferred, the usual tuition schedule will apply.

Leave of Absence Fee

The University will assess a \$50 fee per term (excluding summer) for students who are on official leave of absence.

Insurance

The University requires that all full-time and foreign students be covered by the Student Health Plan offered through the University. Individual, two-party, and family coverages are available through the School. However, this requirement will be waived with proof of comparable coverage. Coverage is effective either the first day of July or September depending on your degree program. Your account will be charged health insurance premiums on a **term basis**.

Summer Term – July & August

1st Term – September & October

2nd Term – November & December

3rd Term – January, February & March

4th Term – April, May & June

Premiums are due by the payment due date for each term. Monthly premiums for 2004–2005 are as follows: \$145 for individual, \$323 for two-party and \$403 for family. It is the **student's responsibility** to notify the Student Accounts Office when insurance coverage should be terminated. Students will be responsible for all charges resulting from the failure to provide such cancellation notification without exception. The Student Accounts Office reserves the right to cancel medical coverage without further notice for any student who is no longer enrolled. The Student Accounts Office should be contacted for health insurance brochures and information.

Binding of Thesis

Students in degree programs that entail submission of a thesis or dissertation are assessed a charge for binding of the manuscript. Payment is due in the Office of

Records and Registration after the student's thesis has been officially approved and at the time that copies are deposited in the Office of Records and Registration for binding. Doctor of Philosophy students must also comply with special regulations of the Graduate Board of the University concerning micro-filing of the dissertation and the related fee.

Other Costs

Costs associated with completion of a satisfactory investigation in the principal subject and its presentation in the form of a thesis are the ultimate responsibility of the student. Some departments offer financial assistance to cover these costs. Students should contact their department for estimates of such costs and information on assistance.

The Departments

FACULTY LISTING/DESCRIPTION OF PROGRAMS/COURSE OFFERINGS

Listing of faculty appointments is effective as of May 2004.

Courses listed are subject to change. Students are advised to consult the schedule of anticipated course offerings prepared in advance of each registration period.

Course listings consist of the following:

A three character department code—The first two characters identify the department in which the course is offered. The third character may be used to indicate a division or cluster within the department. Refer to the list below for department/division codes.

DEPARTMENT/DIVISION CODES

- 120. Biochemistry and Molecular Biology
- 140. Biostatistics
- 180. Environmental Health Sciences
 - 182. *Environmental Health Engineering*
 - 183. *Physiology*
 - 186. *Radiation Health Sciences*
 - 187. *Toxicological Sciences*
 - 188. *Occupational and Environmental Health*
- 220. International Health
 - 221. *Health Systems*
 - 222. *Human Nutrition*
 - 223. *Disease Prevention and Control*
 - 224. *Social and Behavioral Interventions*
- 260. Molecular Microbiology and Immunology
- 300. Health Policy and Management
- 310. Health Policy and Management, continued
- 330. Mental Health
- 340. Epidemiology
- 380. Population and Family Health Sciences
- 390. Clinical Investigation
- 550. Adjunct Studies

A course number—A three character course number is used to indicate the level, format, and the sequence of the course. Since the Johns Hopkins Bloomberg School of Public Health is a graduate division, courses will be numbered within the following range:

- A. 600-699: Formal courses normally offered in the first year of graduate study.
- B. 700-799: Formal courses normally offered in the second or last year of graduate study.
- C. 800-899: Repeatable courses offered in a variety of informal (i.e., non-lecture) formats which can be distinguished by the following subdesignations:
 - 800 MPH Capstone Project
 - 810 series Field Placement
 - 820 series Thesis Research (master's and doctoral)
 - 830 series Postdoctoral Research
 - 840 series Special Studies and Research
 - 850 series Laboratory rotation courses
 - 860 series Informal seminars (e.g., journal or research clubs) that vary in content each term and address current topics

Examples

- 182.820 Thesis Research in Environmental Health Engineering
- 340.840 Special Studies and Research Epidemiology
- 260.851 Laboratory Rotations
- 187.861 Toxicological Sciences Seminar

INTERDIVISIONAL CODES

Some School of Public Health courses may have prerequisites from other divisions of the University. Also, other divisions may jointly offer courses with the School. To denote courses offered by other University divisions, the following system is used:

- AS School of Arts and Sciences (SAS)
- ME School of Medicine (SOM)
- EN School of Engineering (SOE)
- NR School of Nursing (SON)

(Example: ME 330.702 denotes a School of Medicine course, in the Department of Pharmacology and Molecular Sciences.)

Biochemistry and Molecular Biology

GOALS OF THE DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

The goals of the Department of Biochemistry and Molecular Biology are to increase current knowledge of the biochemical and molecular basis of normal and abnormal cellular processes, and to train highly qualified scientists who, through research, teaching, and service will continue to provide new insights into the biochemical, molecular, and biophysical underpinnings of biomedical issues that have an impact on the health of the public. Critical biomedical issues centered in reproduction are addressed by the Department's Division of Reproductive Biology.

EDUCATIONAL PROGRAMS OF THE DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

The department offers the following degree programs: PhD in Biochemistry and Molecular Biology; Master of Health Science (MHS) in Reproductive Biology; and Master of Science (ScM) in Reproductive Biology.

PhD Program of the Department

The PhD program in the Department of Biochemistry and Molecular Biology is designed for individuals who wish to prepare for a career in academic research/teaching, government research, or industrial research. This program is suitable for individuals with a bachelor's degree in biology, chemistry, biochemistry or molecular biology. MD-PhD students who wish to conduct their PhD research in the department are given very serious consideration. The PhD in Biochemistry and Molecular Biology emphasizes molecular studies of multiprotein systems, molecular and cellular biology, enzymology, molecular genetics, biophysics, and biochemical nutrition. This research has applications to cancer, aging, neurological diseases, and environmentally based diseases. The PhD specializing in Reproductive Biology emphasizes reproductive physiology, molecular endocrinology, and cellular, molecular and developmental biology, with applications to aging, fertility/infertility regulation, reproductive toxicology and reproductive tract disease.

Applicants to the PhD program must submit the results of the Graduate Record Examination and General Aptitude Test. The Subject Test in chemistry, biochemistry, molecular and cell biology, or biology is strongly recommended. Significant undergraduate research experience is highly desirable.

All PhD students of the Department of Biochemistry and Molecular Biology have a common core curriculum during the first year. In their first year all students are required to take Molecular Biology and Genomics, Macromolecular Structure and Analysis, Biochemical and Biophysical Principles, Genetics, Cell Structure and Dynamics, Organic Mechanisms in Biology, Pathways and Regulation, Computational Biology and Bioinformatics, and Mechanisms for Preservation of Genome Integrity. In addition, students must take two of the following electives: Reproductive Biology for Biomedical Scientists, Structure Determination, Developmental Biology, Mechanisms in Bioorganic Chemistry, Neurobiology, Epigenetics, Transcription Mechanisms, Virology, Post-Transcriptional Events in Gene Regulation, Structure and Chemistry of Lipid Bilayers, The Nucleus, Fundamentals of Membrane Physiology, or Introductory Molecular Immunology. First-year students also participate in a year-long Current Research Literature course (120.852) that is directed by department faculty. In addition, students spend about one-half of their time conducting laboratory research; each student rotates through five different laboratories, spending six to seven weeks in each laboratory. At the end of each period, students present an oral report on their work to their fellow first-year students and the faculty, and receive a formal, written evaluation of their performance during that rotation. At the end of the fifth rotation, students choose their thesis mentor. Students are given their first choice of mentor as far as possible.

In the second year, students who specialize in biochemistry and molecular biology take Molecular Biology of Carcinogenesis (120.615), whereas those who are specializing in reproductive biology take either Molecular Endocrinology (120.621) or Molecular and Cellular Mechanisms of Reproduction (120.622) and Reproductive Biology for Biomedical Scientists (if not taken in first year). Those students with an interest in environmental health take Principles of Toxicology (187.610) and Environmental Health (180.601). All students are required to take a Research Ethics course (550.860) and Public Health Perspectives in Research (550.865). In addition, prior to their PhD oral qualifying exam, students must complete nine (9) credit units of course work outside the Department, but

within the School of Public Health. Three (3) of the nine (9) credit units must be taken outside the laboratory science departments. These non-laboratory departments include Biostatistics, Epidemiology, Health Policy and Management, International Health, Mental Health, and Population and Family Health Sciences. Students are also required to take, prior to graduation, three seminar courses, which are offered by various members of the Department faculty throughout the academic year. Finally, a rich array of seminar programs and journal clubs are available to all students.

To help prepare students for their research careers, and to evaluate their ability to conduct research, students take two departmental oral exams. The subject of the first exam is the student's thesis topic. During their first summer, students write a five-page research proposal and defend it orally before a departmental committee. The subject of the second exam, which is given in the late spring of the second year, is chosen by the students from a list of topics offered by the faculty. Each student spends a month preparing for this exam. Again, the student writes a five-page research proposal and defends it orally before a departmental faculty committee. In addition to the departmental oral exams, all candidates for the PhD degree at Johns Hopkins University must pass the University Graduate Board oral exam, usually taken at the end of the second year. Upon completion of the program, a dissertation, based on results obtained during the student's independent research and prepared in a format suitable for publication, will be presented in a public seminar and defended in a final oral examination. Experience indicates that a minimum of four years is necessary to fulfill all PhD requirements, and that the average student requires about five years.

Masters Programs of the Department

The department's Division of Reproductive Biology offers the Master of Health Science (MHS) and Master of Science (ScM) degrees. The MHS program requires one year of coursework and the writing of a scholarly, library-based thesis. The program is designed for students seeking graduate-level coursework and/or exploring career options in the health sciences. Many of the students who enroll in this program wish to improve their chances for medical or other professional schools, while others may opt to pursue advanced graduate work or positions in industry.

The ScM program requires two years of study, including coursework, the completion of original research, and the writing of a research-based thesis. Typically, ScM students present their findings at

national meetings and publish their results in peer-reviewed journals. Some ScM students continue on to advanced graduate study (MD, PhD), while others obtain research positions in industry or elsewhere. There is substantial flexibility in coursework. The courses that are required for master's candidates (both MHS and ScM) are: Fundamentals of Reproductive Biology (120.620), Molecular Endocrinology (120.621), Molecular and Cellular Mechanisms of Reproduction (120.622), Multidisciplinary Research in the Reproductive Sciences (120.623), Public Health Perspectives in Research (550.865), and Research Ethics 550.860 or Research Ethics and Integrity 306.665. Courses that are highly recommended include: Biochemistry—An Introductory Course (120.600, 120.601), Introduction to Molecular Biology (120.602), and Molecular Biology of Disease (120.603). Students are expected to participate in journal clubs and seminar programs of the division and department.

General Areas of Research

The areas of emphasis in the Department of Biochemistry and Molecular Biology include the following research issues:

Biochemical Nutrition—cellular growth control.

Bioorganic Chemistry—organic and enzymatic synthesis of nucleic acids; antisense oligonucleotides; nucleic acid analogs.

Biophysics—biopolymer structure and interaction; fluorescence spectrometry of protein conformation and function, and of protein-protein interactions.

Structural Biology—x-ray crystallography; protein and nucleic acid structure; RNA splicing.

Cellular and Molecular Biology—molecular carcinogenesis; regulation of chromosomal DNA replication; signal transduction mechanisms; DNA repair; biosynthesis, trafficking, and function of glycoproteins; nuclear transport; cell adhesion and interactions; protein turnover during erythroid differentiation; glycobiology; mechanisms of heat shock protein function; control of eukaryotic gene expression during differentiation and alterations in gene expression during neoplastic transformation; control of plant gene expression; mechanisms of DNA rearrangement; eukaryotic genome structure and sequencing; eukaryotic growth control; bacteriophage and bacterial genetics; mechanisms of bacterial transformation, transfection, and recombination.

Biochemistry and Enzymology—mechanisms of DNA replication, recombination, and repair; kinetics of enzyme action; peptide chemistry and protein structure; enzyme mechanisms; mechanisms of molec-

ular chaperone action and targeting; structure, function, and synthesis of membrane molecules; specificity and targeting in ubiquitin-mediated proteolysis.

Reproductive Biology—human male sex differentiation and development; gene function during development; hormonal and neural regulation of seasonal reproductive behavior; regulation of structure, function and aging of Leydig cells in the mammalian testis; molecular mechanisms of androgen action in target tissues; function and control of prostate growth in relation to normal physiology, benign prostatic hyperplasia, and cancer; hormonal and molecular regulation of mammalian spermatogenesis; interactions between Sertoli and germ cells in the mammalian testis; oocyte maturation; sperm egg interaction during fertilization; development of methods for contraception and prevention of sexually transmitted diseases; effects of environmental toxicants on the reproductive tract.

Biochemistry and Molecular Biology

Faculty data as of April 1, 2004. For current listing, please click here:

<http://commprojects.jhsph.edu/faculty/bmb.cfm>

Roger McMacken, Ph.D.

Chair of the Department.
E.V. McCollum Professor.

Primary Faculty

Judith L. Bender, Ph.D.

Associate Professor. *Biochemistry and Molecular Biology, Arabidopsis thaliana, gene expression, tryptophan biosynthesis, signal transduction, epigenetic control, DNA methylation, gene silencing, chromatin.*

Terry R. Brown, Ph.D.

Professor, Division of Reproductive Biology.
Androgens, androgen receptor, prostate, testis, male reproduction.

Floyd R. Bryant, Ph.D.

Professor. *Biochemistry and Molecular Biology, E. coli, Streptococcus, RecA, Strand-exchange, ATP Hydrolysis, Recombination, DNA repair.*

Martin Charron, Ph.D.

Scientist, Division of Reproductive Biology.
Cathepsin L, germ cells, Sertoli cells, spermatogenesis, stage-specific gene expression, promoter, transcription factors, transgenic mice.n.

Haolin Chen, Ph.D.

Assistant Scientist, Division of Reproductive Biology. *Aging, Leydig cell, Steroidogenesis, Rat.*

Janice Evans, Ph.D.

Assistant Professor, Division of Reproductive Biology. *Biochemistry and Molecular Biology, fertilization, cell adhesion, cytoskeleton, egg, sperm, oocyte maturation, contraception, infertility.*

Lawrence Grossman, Ph.D.

University Distinguished Service Professor.
Biochemistry and Molecular Biology, Nucleotide excision repair (NER) pathway, UvrA, UvrB and UvrC proteins.

Eric Grote, Ph.D.

Assistant Professor. *Biochemistry and Molecular Biology, Cell-cell fusion, fusion of a sperm with an egg.*

Leslyn A. Hanakahi, Ph.D.

Assistant Professor. *Non-Homologous End-Joining (NHEJ), DNA double strand break repair, inositol phosphate, Ku, DNA-PK, XRCC4, DNA Ligase IV.*

P. C. Huang, Ph.D.

Professor. *Biochemistry and Molecular Biology, stress-inducible genes and their gene products, metallothionein.*

Clara Kielkopf, Ph.D.

Assistant Professor. *Gene regulation, RNA, splicing, U2AF, biophysics, structure, genetic disease.*

Sharon S. Krag, Ph.D.

Professor. *glycosylation, dolichol, site-occupancy, molecular approaches, research ethics.*

Brian A. Learn, Ph.D.

Research Associate.

David E. Levin, Ph.D.

Professor. *Biochemistry and Molecular Biology, stress and growth control signals are transmitted from the cell surface to their ultimate intracellular targets is central to understanding how cells respond to changes in their environment, signal transduction pathways.*

Lin-di Luo, Ph.D.

Research Associate, Division of Reproductive Biology.

Michael J. Matunis, Ph.D.

Assistant Professor. *Biochemistry and Molecular Biology, cell biology, understanding how the thousands of distinct proteins made by each cell find their correct intracellular and extracellular destinations.*

Roger McMacken, Ph.D.

E. V. McCollum Professor of Biochemistry.
Biochemistry and Molecular Biology, DNA replication, biochemical mechanisms, molecular chaperones, protein-DNA interactions, protein remodeling.

Paul S. Miller, Ph.D.

Professor. *Biochemistry and Molecular Biology, biophysical and biological properties of nucleic acid analog, properties of nuclease-resistant oligonucleotides, DNA repair, interstrand cross-links.*

Scott D. Morrow, B.S.

Research Associate. *DNA Synthesis, custom-synthesized oligonucleotides, nucleic acid synthesis.*

Cecile M. Pickart, Ph.D.

Professor. *Ubiquitin, polyubiquitin, proteasome, DNA repair, Alzheimer's disease.*

John J. Scocca, Ph.D.

Professor. *Biochemistry and Molecular Biology, mechanism of site specific recombination promoted by a system derived from a small bacteriophage, HP1 of Haemophilus influenzae.*

William W. Wright, Ph.D.

Professor, Division of Reproductive Biology. *Biochemistry and Molecular Biology, cell-cell interactions that underlie the formation and function of the male gamete, specific and precise communication between somatic, Sertoli cells and developing male germ cells.*

Barry R. Zirkin, Ph.D.

Professor and Director, Division of Reproductive Biology. *Biochemistry and Molecular Biology, molecular regulation of Leydig cell structure and function during aging, human male, serum levels of testosterone, sperm.*

Joint Appointments

Gregory Ball, Ph.D.

Professor of Psychology, School of Arts and Sciences. *Biopsychology, neuroendocrine and neurochemical basis of birdsong learning and production, behavioral neuroendocrinology, neuroethology.*

Srinivasan Chandrasegaran, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, restriction enzymes, chimeric nucleases, targeted recombination.*

Valeria Culotta, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, copper, metallochaperones, CCS, ATX1, superoxide, SOD, manganese, yeast, ALS.*

Nancy E. Davidson, M.D.

Professor of Oncology, School of Medicine. *DNA Methylation and Steroid Receptor Regulation*

John Gearhart, Ph.D.

Professor of Gynecology and Obstetrics, School of Medicine.

J. Marie Hardwick, Ph.D.

Associate Professor of Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, Molecular mechanisms of programmed cell death (apoptosis) and its role in neuronal disease and viral pathogenesis.*

Jonathan Jarow, M.D.

Professor of Urology, School of Medicine. *Urology, Radiology, Pathology, and Reproductive Biology.*

Thomas W. Kensler, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, Chemical carcinogenesis, chemoprevention, hepatocarcinogenesis, reactive oxygen, antioxidants, enzyme induction, aflatoxin, oltipraz, chlorophyllin.*

Sean T. Prigge, Ph.D.

Assistant Professor of Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, malaria, fatty acid biosynthesis, apicoplast, x-ray crystallography, enzymology.*

Alan Scott, Ph.D.

Professor of Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, parasitic nematodes, biology, infections, parasites, filarial nematodes, asthma, allergy, gene expression analysis, genomics.*

Edward Wallach, M.D.

Professor of Gynecology and Obstetrics, School of Medicine. *Physiology of ovulation.*

Howard Zacur, M.D.

Professor of Gynecology and Obstetrics, School of Medicine. *Prolactin disorders, hormonal contraception and hormone replacement during the menopause.*

Departmental Affiliates

Vilhelm Bohr, M.D., Ph.D.

Senior Associate.

Paul O. P. Ts'o, Ph.D.

Senior Associate. *Biochemistry and Molecular Biology, biophysics, chemistry and molecular biology of nucleic acids, including drug development, the use of oligonucleotide analogs.*

Kathryn C. Zoon, Ph.D.

Senior Associate.

Biochemistry and Molecular Biology

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

120.600 BIOCHEMISTRY -- AN INTRODUCTORY COURSE I. (5 units). First term. Scocca, John J.

Lectures and analyses of research papers present the metabolic processes underlying cell growth and the chemical properties, biosynthesis, and functions of cellular constituents. Emphasizes the roles of enzymes and nucleic acids in long- and short-term regulation of the cellular economy, and biochemical approaches useful in understanding the relationships.

Prerequisites: Introductory organic chemistry.

Consent of instructor required.

120.601 BIOCHEMISTRY -- AN INTRODUCTORY COURSE II. (5 units). Second term. Scocca, John J.

Lectures and analyses of research papers present the metabolic processes underlying cell growth and the chemical properties, biosynthesis, and functions of cellular constituents. Emphasizes the roles of enzymes and nucleic acids in long- and short-term regulation of the cellular economy, and biochemical approaches useful in understanding the relationships.

Student evaluation: Student evaluation based on three exams per term.

Prerequisites: 120.600.

Consent of instructor required.

120.602 INTRODUCTION TO MOLECULAR BIOLOGY. (4 units). First term. Bender, Judith; Matunis, Michael.

Discusses synthesis of macromolecules, the genetic code, regulation of gene expression, and recent advances in biotechnology, emphasizing special contributions from microbial studies and cell-free systems.

Student evaluation: Student evaluation based on two exams.

Prerequisites: Introductory biochemistry or consent of instructor.

120.603 MOLECULAR BIOLOGY OF DISEASE. (3 units). Second term. Krag, Sharon.

Discusses molecular biology approaches to explain the mechanisms and detection of human disease. Presents some current DNA recombinant techniques and their application to aspects of human genetic disease; molecular basis of selected human genetic diseases; and ethical issues associated with prenatal screening and gene therapy. Additional topics include isolation of cDNAs and genes; identification of mutations; prenatal screening; positional cloning; chromosome walking and jumping; animal models; and gene therapy.

Student evaluation: Student evaluation based on a paper.

120.608 GENOMICS FOR PUBLIC HEALTH.

(3 units). Fourth term. Bender, Judith; Brown, Terry; McMacken, Roger.

Introduces genomics and modern genetic technologies, with emphasis on their application to significant public health problems, to students with no or minimal formal training in molecular genetics. Lectures and discussions will be integrated with computer exercises in laboratory sessions. Topics include genome sequencing and structure; gene cloning; mapping of human disease genes; use of DNA, protein microarrays, and PCR in studies of human disease; comparative genomics of model and pathogenic organisms; mining of genomic databases; drug design for infectious diseases; genetically engineered food; genetic technologies in forensics and diagnostics; gene therapy; and stem cells.

Student evaluation: Student evaluation based on a take-home mid-term exam (1/3 of total) and a final exam (2/3 of total).

Prerequisites: A college level course in biology would be helpful.

120.613* NUCLEIC ACID CHEMISTRY I. (2 units). First term. Miller, Paul. Next offered 2005-2006.

Presents organic chemistry, structure, and conformation of nucleic acids and their components. 120.613 describes the synthesis of nucleoside, nucleoside antibiotics, oligo- and polynucleotides, and nucleic acid analogs, as well as chemical reactions involving these materials. 120.614 describes the structure, conformation, and interactions of nucleoside, oligo- and polynucleotides, and polynucleotide complexes as investigated by various physiochemical and spectroscopic techniques.

Student evaluation: Student evaluation based on a final exam.

120.614* NUCLEIC ACID CHEMISTRY II. (2 units). Second term. Miller, Paul. Next offered 2005-2006.

Presents organic chemistry, structure, and conformation of nucleic acids and their components. 120.613 describes the synthesis of nucleoside, nucleoside antibiotics, oligo- and polynucleotides, and nucleic acid analogs, as well as chemical reactions involving these materials. 120.614 describes the structure, conformation, and interactions of nucleoside, oligo- and polynucleotides, and polynucleotide complexes as investigated by various physiochemical and spectroscopic techniques.

Student evaluation: Student evaluation based on a final exam.

Prerequisites: 120.613*.

Consent of instructor required.

120.615 MOLECULAR BIOLOGY OF CARCINOGENESIS. (2 units). Third term. Levin, David.

Provides a biochemical background of the perturbations to the structure and function of macromolecules caused by environmental carcinogens, and the consequences of these alterations. Topics include metabolic activation of chemical carcinogens, mechanisms of DNA repair, detection of carcinogens as mutagens, cellular models of transformation, cellular growth control and regulation of the cell division cycle, oncogenes and tumor suppressors, and the effects of the immune system on tumorigenesis.

Student evaluation: Student evaluation based on a final exam.

Prerequisites: A course in biochemistry, molecular, or cell biology.

Consent of instructor required.

* Not offered every year as indicated.

120.620 FUNDAMENTALS OF REPRODUCTIVE BIOLOGY. (3 units). First term. Evans, Janice. Former course number 320.602.

Addresses the basic biological mechanisms that underlie male and female reproduction and that pertain to reproductive health issues, such as contraception, infertility, sexually transmitted diseases, and reproductive aging. Suitable for students with limited backgrounds in the biological sciences.

Student evaluation: Student evaluation based on mid-term and final exams.

120.621 MOLECULAR ENDOCRINOLOGY. (3 units). Third term. Brown, Terry. Former course number 320.644.

Presents molecular biology as applied to endocrinology. Topics include the molecular biology and genetics of embryogenesis, sexual differentiation, steroidogenesis, growth factors, carcinogenesis, and hormonal regulation of gene expression. Examines steroid and peptide hormone action via paracrine, autocrine, and endocrine mechanisms of receptor interaction; transmembrane and intracellular signal transduction; ionic signalling; and regulation of nuclear gene transcription.

Student evaluation: Student evaluation based on class participation, presentation of experimental papers, a short paper, and a final exam.

120.622 MOLECULAR AND CELLULAR MECHANISMS OF REPRODUCTION. (4 units). Fourth term. Charron, Martin; Wright, William. Former course number 320.640.

Addresses cellular and molecular regulation of fundamental reproductive processes. The two processes emphasized in this course are ovulation and sex determination.

Student evaluation: Oral presentations in class and a final written examination.

Consent of instructor required.

120.623 MULTIDISCIPLINARY RESEARCH IN THE REPRODUCTIVE SCIENCES. (3 units). Second term. Zirkin, Barry.

Familiarizes students with cutting edge research in the reproductive sciences, including techniques used in biomedical research, and with reading and interpreting original research articles. Topics include steroidogenesis, molecular and cellular biology of somatic cells and gametes of the reproductive tract, hormone receptor action, effects of reproductive toxicants, and diseases of the reproductive tract. Research techniques to be discussed include fundamental methods in molecular and cell biology such as promoter analysis, immunological techniques, knockout and transgenic approaches, microarrays, and many others.

Student evaluation: Student evaluation based on attendance, class participation and final exam.

120.624 MECHANISMS FOR PRESERVATION OF GENOME INTEGRITY. (3 units). Fourth term. Bender, Judith; Pickart, Cecile.

Examines molecular mechanisms devoted to the preservation of genome integrity, principally in eukaryotic cells. Topics include DNA damage recognition, DNA repair pathways, cell cycle checkpoint mechanisms, the role of p53 in DNA damage responses, suppression of DNA rearrangements and transposon movement by heterochromatin formation, and telomere maintenance. Emphasizes the relevance of these mechanisms for human cancer.

Student evaluation: Two in-class exams.

Prerequisites: Graduate level molecular biology, genetics and biochemistry.

Consent of instructor required.

120.625 REPRODUCTIVE BIOLOGY FOR BIOMEDICAL SCIENTISTS. (3 units). Fourth term. Brown, Terry; Evans, Janice; Wright, William; Zirkin, Barry.

Examines key topics in reproductive biology: production and actions of hormones (including steroidogenesis, regulation of gene expression, signal transduction), neuroendocrinology, and the cell and molecular biology of mammalian gametogenesis, fertilization and early embryo development. In this intensive course, material is presented in lectures, as well as through critical evaluation and discussion of current scientific literature.

Student evaluation: Exams and participation in in-class discussions.

Prerequisites: Designed for Ph.D. students in the biomedical sciences with an extensive undergraduate background in biology, biochemistry, molecular biology, or chemistry, or a similar discipline. A previous course in reproductive biology is not required. 120.620, Fundamentals of Reproductive Biology, is not sufficient preparation without additional background in the biological sciences, nor is 120.625 interchangeable with 120.620.

RESEARCH STUDIES AND .800 COURSES

A degree candidate initiates research studies under the supervision of one of the staff members after completion of the laboratory rotations (120.850). In addition to the formal courses, a number of special seminars and lunch-time discussions take place. Several research groups hold weekly or biweekly meetings that are open to all students, and discussion groups in specialized areas meet as interest demands. Students also attend some of the numerous seminars and lectures that are sponsored by other departments within the University and by other institutions in the greater Baltimore area.

120.800 MPH CAPSTONE: BIOCHEMISTRY AND MOLECULAR BIOLOGY. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the Capstone project.

Consent of instructor required.

120.820 THESIS RESEARCH

BIOCHEMISTRY. (variable units). First, second, third and fourth terms.

120.830 POSTDOCTORAL RESEARCH

BIOCHEMISTRY. (variable units). First, second, third and fourth terms.

120.840 SPECIAL STUDIES AND RESEARCH

BIOCHEMISTRY. (variable units). First, second, third and fourth terms.

Consists of presentations by speakers of scientific renown on important and current information in biochemistry, and molecular and cellular biology, and by faculty members from the university whose research efforts are of general interest to fellows, students, and faculty.

120.850 BIOCHEMICAL TECHNIQUES. (6 units). First, second, third and fourth terms. Departmental faculty.

All departmental students spend seven weeks participating in the research activities of a faculty member's laboratory. During the academic year each student rotates through five laboratories.

Student evaluation: Student evaluation based on ability to design experiments and to interpret results in their scientific context.

120.852 CURRENT RESEARCH

LITERATURE. (2 units). First, second and third terms. Hardwick, J.-Marie; Pickart, Cecile. Jointly offered with the Department of Molecular Microbiology and Immunology.

Provides a complement to the BCMB core curriculum. Student reads research papers relating to a core lecture topic. Discussions are led by a student while a faculty member from Biochemistry or MMI act as facilitator. Helps students to develop skills in reading the primary literature and provides an introduction to the experimental paradigms underlying the concepts presented in the core course.

Student evaluation: Student evaluation based on class participation.

Consent of instructor required.

Special Topics in Biochemistry

Each academic year two or three seminar courses present topics of current interest. Successful completion of three seminars is a requirement for the doctoral degree in biochemistry. Students share in the presentation of these topics. Special topic courses for 2004-05 are:

120.853 SUMMER BIOCHEMICAL

TECHNIQUES. (6 units). Summer term. Departmental faculty.

Biochemistry and Molecular Biology doctoral students spend six weeks participating in the research activities of a faculty members laboratory.

Student evaluation: The ability to design experiments and to interpret results in their scientific context, combined with a final oral presentation to the department faculty.

Consent of instructor required.

120.861 SPECIAL TOPICS IN

BIOCHEMISTRY: NUCLEAR HORMONE RECEPTOR STRUCTURE, FUNCTION AND ACTIVITY. (1 unit). Second term. Brown, Terry.

Covers recent advances in understanding of nuclear hormone receptor structure, function and activity. Features a student-led discussion of one or more primary research papers that focus upon various members of the nuclear hormone receptor family. Topics include the function of nuclear receptors as transcription factors, their ability to repress or activate gene transcription in the presence of specific ligands and their involvement in the dynamic assembly of multi-protein complexes that mediate effects on chromatin structure and gene transcription.

Student evaluation: Student evaluation based on quality of presentations and participation in class discussions.

Consent of instructor required.

120.862 SPECIAL TOPICS IN

BIOCHEMISTRY: FUNCTIONS OF SMALL RNAs IN DEVELOPMENT AND DEFENSE. (1 unit). Third term. Bender, Judith.

Covers recent advances in processes controlled by small RNAs, including RNA interference, developmental regulation via micro-RNAs, and RNA-directed heterochromatin formation. Each meeting features a student-led discussion of a primary research paper. Each student also prepares a short written critique of the presented paper.

Student evaluation: Student evaluation based on in-class presentation, written critique, and participation in discussion.

120.863 SPECIAL TOPICS IN

BIOCHEMISTRY: NUCLEOTIDE EXCISION REPAIR. (1 unit). Fourth term. Miller, Paul.

Examines our current understanding of nucleotide excision repair, particularly as it occurs in mammalian cells. Each class involves a student-led discussion of one or more primary papers from the current literature.

Student evaluation: Student evaluation based on the quality of their presentations and their participation in class discussions.

120.870 MHS THESIS IN REPRODUCTIVE BIOLOGY. (5 units). Fourth term. Brown, Terry; Evans, Janice; Wright, William; Zirkin, Barry.

In consultation with a faculty mentor from the Division of Reproductive Biology, students prepare a critical, scholarly paper on an assigned subject. The paper may be based solely on review of the relevant literature, or it may be based in part on work conducted in the laboratory.

Student evaluation: The quality and completeness of the review of the literature, and on a student's evaluation of that literature.

Prerequisites: Master of Health Science candidates in Reproductive Biology.

COURSES JOINTLY OFFERED WITH OTHER DEPARTMENTS

550.630 PUBLIC HEALTH BIOLOGY. See Extradepartmental Courses.

Biostatistics

The Department of Biostatistics offers training at the doctoral or master's degree level. Courses are offered in probability, statistical theory, statistical methodology, foundations of statistics, statistical computing, statistical genetics, and bioinformatics. The department provides exceptional opportunities for students to acquire range and depth in modern aspects of statistics with applications to the biological, medical, environmental, behavioral, and health sciences.

DEGREE PROGRAMS

Doctor of Philosophy

Applicants to the PhD program in biostatistics should have done undergraduate work in the biological sciences, social sciences, and mathematics. Knowledge of calculus and linear algebra is highly desired. Applicants must also submit results of the Graduate Record Examination. A typical curriculum for the PhD is described below. Depending upon their individual preparation, entering students may be placed in advanced standing, or they may find it advantageous to select courses initially from both the first year and second year lists.

Year One

140.651-654 Methods in Biostatistics I-IV
140.671-672 Introduction to Probability I-II
140.673-674 Introduction to Statistical Theory I-II
110.405-Analysis I*
140.693-694 Advanced Probability I*-II*
340.601 Principles of Epidemiology
Electives
* PhD students only

Year Two

140.751-754 Advanced Generalized Linear Models I-IV
140.771-772 Advanced Statistical Theory I-II
140.773-774 Foundations of Statistics I-II
140.693-694 Advanced Probability I*-II*
550.860 Research Ethics
Electives
* PhD students only, if not taken in year one

Year Three

550.865 Public Health Perspectives on Research
Electives/Special studies/Thesis research

Years Four-Five

Electives/Special studies/Thesis research

Comprehensive examinations covering course material are taken at the end of the first year, and there is a departmental oral examination at the end of the second year. Research leading to a dissertation may involve development of new theory and methodology, or it may be concerned with applications of statistics and probability to problems in public health, medicine, or biology.

Master of Science

The Master of Science is a two-year program that emphasizes statistical methods, biometry, statistical computing, and epidemiology. Applicants to the ScM program should have a baccalaureate degree or its equivalent at the time they expect to begin their graduate studies. They should have a major in one of the biological, physical, or social sciences, or mathematics, and have strong quantitative interests.

The first year curriculum is the same as that for doctoral candidates, with the exception of analysis and advanced probability. During the second year, students may choose from a wide range of courses to meet their individual needs. Master of Science candidates are required to take 64 units of coursework and pass a comprehensive written exam at the end of the first year. A thesis is required and usually involves applications of statistical methods to health or medical data. ScM students are also required to take the courses 550.860 (Research Ethics) and 550.865 Public Health Perspectives on Research.

Master of Health Science in Biostatistics

The MHS degree is intended for individuals who require more than minimal knowledge of biostatistics in the conduct of their research. It is not intended as a terminal degree for professional biostatisticians. Applicants are expected to be engaged in active research in a health-related field and already have an advanced degree in one of the health sciences (e.g., MD, PhD).

The MHS program involves one year of coursework (64 units). Students must take the first-year comprehensive written exam and must demonstrate competence in material covered by the courses in 140.651-654, 140.671-674, and 340.601. Additionally, MHS students are also required to take the courses 550.860 (Research Ethics) and 550.865 Public Health Perspectives on Research. A thesis is not required.

Concurrent Schoolwide Doctoral/Master of Health Science Program in Biostatistics

This program provides doctoral students in other departments the opportunity to pursue an MHS in Biostatistics concurrently with their doctoral program. The administrative requirements and certifications by the faculty as set forth in the existing Policy and Procedure Memoranda for the respective doctoral degrees apply to the doctoral degree requirements of the concurrent Schoolwide Doctoral/Master of Health Science program in Biostatistics.

Students must have been accepted into one of the doctoral programs in the Johns Hopkins Bloomberg School of Public Health. With the primary department's approval, the student may apply to the Master of Health Science program in Biostatistics. Students already in residence may also apply to the program. Specific details about sequencing of courses, etc., are arranged in conjunction with the doctoral program involved. Sixty-four units in biostatistics and other areas are required. These units must be taken over the course of the student's first two or three years in residence in the doctoral program. The curriculum is the same as that for MHS candidates in biostatistics. The Biostatistics graduate program works with the student and the student's advisor in the primary department to suggest course sequencing and discuss any problems that might arise. Upon completion of the required coursework, the student takes the biostatistics first-year comprehensive written exam. Satisfactory performance on this exam completes the MHS program in Biostatistics component of the concurrent program. The student will then be eligible for award of the Master of Health Science degree.

Master of Health Science in Bioinformatics

Program Co-Directors: Giovanni Parmigiani, PhD; Fernando Pineda, PhD.

The Department of Biostatistics, in collaboration with the Department of Molecular Microbiology and Immunology, has developed a Master of Health Science (MHS) program in bioinformatics. The program's philosophy is to combine strong quantitative foundations with a broad cross-disciplinary experience. The degree will be an intensive one-year program that emphasizes biology, statistical methods, and computing. Applicants to the MHS program should have a baccalaureate degree or its equivalent at the time they expect to begin their graduate studies. They should have a strong quantitative and computational interest as well as a major in one of the biological sciences, physical sciences, mathematics, or engineering.

The MHS in bioinformatics requires one year of enrollment, 64 credit units, a final, culminating project, and a web portfolio. In the first two terms of the program, students take core courses in biostatistics (140.651-652), biology (120.602-603), and computing (140.636-637) as well as introductory bioinformatics (ME440.714). Students who have not taken these courses prior to being admitted to the program will typically earn approximately 36 credits from coursework in the first two terms. In the second two terms, students may choose from a broader range of electives, including at least nine units per term from core electives. Students will also have the option of earning credit for supervised work towards their culminating project. Students will remain enrolled in the summer term, during which they will complete their culminating projects and take a laboratory course in molecular techniques. Students will have the option of developing their culminating project as part of an internship in one of the laboratories affiliated with the program. Internships will start in the third and fourth term, and become more intensive in the summer term. Completion requires developing and posting a "web portfolio"—that is, a student website including links to one or more software development projects demonstrating proficiency in bioinformatics. It will typically include the culminating project as well as coursework.

OTHER PROGRAMS

The department may accept a few students who do not seek degrees (special students and postdoctoral fellows) for periods of at least one academic year. This provision is intended for mature students who wish to undertake specialized study or research.

140.611-612. This two-course sequence covers the major biostatistical methods and concepts used in public health practice and research. Students learn to interpret reports and papers that use common biostatistical concepts and methods, including inferences about a single sample, comparisons of multiple samples, linear and logistic regression, and survival analysis. Emphasizing interpretation and concepts rather than data analysis, this sequence develops understanding of statistical methods rather than developing a student's own data analysis skills.

140.615-616. This two-course sequence covers the basic concepts and methods of statistics with application in the experimental biological sciences. Topics include experimental design and cover statistical ideas and methods pertinent to data collected by laboratory scientists. Statistical computing using the freely available statistical software, R, is integrated into this sequence.

140.621-624. *This four-course sequence prepares students to conduct their own data analysis or participate in the design and analysis of data from public health practice or research studies. Covering statistical ideas and methods similar to those of 140.611-612, the course provides opportunity to put concepts into practice. This sequence is aimed at masters and doctoral students who intend to analyze data themselves or contribute meaningfully to a group of practitioners/researchers doing so. Statistical computing, using the package STATA, is integrated into this sequence.*

140.651-654. *Though the learning objectives and content of this four-course sequence are very similar to those of 140.621-624, linear algebra and multivariable calculus are used as tools of instruction. This sequence is designed for masters or PhD-level students in biostatistics or students with strong quantitative skills in other disciplines.*

Biostatistics

Faculty data as of April 1, 2004. For current listing, please click here:
http://commprojects.jhsph.edu/faculty/Faculty_Biostats.cfm

Scott Zeger, Ph.D.

Chair of the Department.

Primary Faculty

Mary Joy Argo, B.A.

Research Associate.

Karen Bandeen-Roche, Ph.D.

Professor. *Biostatistics, Latent variable models; longitudinal data analysis; multivariate data analysis; multivariate survival analysis; psychometrics; psychological statistical methods and analysis; gerontological statistical methods and analysis; statistical methods and analysis for psychology, gerontology, and aging.*

Sarah J.E. Barr y, M.S.

Research Associate. *Biostatistics, longitudinal, statistical consulting, anthrax, CABG.*

Felicity T. Boyd, Ph.D.

Instructor. *Biostatistics, methods for statistical education.*

Karl W. Broman, Ph.D.

Associate Professor. *Applied statistics, statistical genetics, statistical computing, biostatistics, bioinformatics, genomics.*

Ronald Brookmeyer, Ph.D.

Professor. *Biostatistics, Clinical trials; epidemic models; epidemiological statistics; longitudinal data analysis; multivariate analysis; survival analysis.*

Brian S. Caffo, Ph.D.

Assistant Professor. *Biostatistics, MCMC, Monte Carlo, the EM algorithm, GLMM, exact conditional analysis, non parametric generalized linear mixed models.*

Ciprian M. Crainiceanu, Ph.D.

Assistant Professor. *Biostatistics, Nonparametric Statistics, Bayesian Statistics, Smoothing, Environmental Statistics.*

Frank Curriero, Ph.D.

Assistant Scientist. *Biostatistics, Spatial statistics; environmental statistics; geographic information systems; geostatistics; statistical computing and graphics.*

Marie Diener-West, Ph.D.

Professor. *Biostatistics, clinical trials, oncology, ophthalmology, ocular melanoma, statistical methods, statistical education.*

Francesca Dominici, Ph.D.

Associate Professor. *Biostatistics, Categorical data; clinical data; computing; dose-response models; environmental pollution; environmental statistics; epidemiologic statistics; hierarchical models; incomplete data analysis; longitudinal data analysis; meta-analysis; missing data; Monte Carlo Markov chain techniques; risk assessment; spatial statistics; statistical computing.*

David B. Duncan, Ph.D.

Professor Emeritus.

Constantine Frangakis, Ph.D.

Assistant Professor. *Biostatistics, Bayesian statistics; clinical trials; epidemiologic statistics; foundations of inference; longitudinal data analysis; missing data models.*

Rafael A. Irizarry, Ph.D.

Assistant Professor. *Biostatistics, Bioinformatics, Microarray Data Analysis, Nonparametric Statistics, Time Series Analysis in the biomedical sciences.*

Elizabeth Johnson, M.S.

Research Associate. *Biostatistics, Longitudinal data analysis; statistical consulting.*

Allyn W. Kimball, Ph.D.

Professor Emeritus.

Kung-Yee Liang, Ph.D.

Professor. *Biostatistics, Epidemiological statistics; foundations of inference; hierarchical models; human genetics; longitudinal data analysis; multivariate analysis; statistical genetics.*

Thomas A. Louis, Ph.D.

Professor. *Biostatistics, Bayesian Methods, Risk Assessment, Analysis of Experimental and Observational Data.*

Aidan McDermott, Ph.D.

Assistant Scientist. *Biostatistics, Computational algebra, statistical computing, software design, algebraic topology.*

John McGready, M.S.

Instructor. *Biostatistics, Statistical Education, Statistical Consulting, Statistical Methods, Statistical Literacy.*

Charles A. Rohde, Ph.D.

Professor. *Biostatistics, Environmental statistics; generalized linear models; linear models; multivariate analysis.*

Alan Ross, Ph.D.

Professor. *Biostatistics, Sampling.*

Ingo Ruczinski, Ph.D.

Assistant Professor. *Bioinformatics, protein folding, statistical computing, machine learning.*

Daniel O. Scharfstein, Sc.D.

Associate Professor. *Biostatistics, Causal inference; Longitudinal data analysis; Survival analysis; Missing data; Group sequential clinical trials; Semiparametric models.*

Tan, Zhiqiang

Assistant Professor. *Biostatistics, nonparametric statistics, semiparametric models, causal inference, survey sampling, statistical computing.*

Richard E. Thompson, Ph.D.

Assistant Scientist. *Biostatistics, Computing; environmental statistics; risk assessment; mathematical modeling; statistical computing.*

James Tonascia, Ph.D.

Professor. *Biostatistics, Computing; numerical analysis; statistical computing.*

Mei-Cheng Wang, Ph.D.

Professor. *Biostatistics, Incomplete data analysis; survival analysis.*

Scott Zeger, Ph.D.

Professor. *Biostatistics, environmental statistics; epidemiologic statistics; hierarchical models; longitudinal data analysis; neuroimaging; regression analysis; time series analysis; Biostats, Behavior and Health.*

Joint Appointments**Saifuddin Ahmed, M.B.B.S., Ph.D.**

Assistant Research Professor, Population and Family Health Sciences. *Population and Family Health Sciences, Reproductive health, reproductive epidemiology, family planning and MCH care, complex population surveys.*

Aravinda Chakravarti, Ph.D.

Professor of Genetic Medicine, School of Medicine.

Josef Coresh, M.D., Ph.D.

Associate Professor of Epidemiology. *Epidemiology, Cardiovascular Epidemiology, Kidney Disease, Genetic Epidemiology, Research Methods, Heart, Kidney.*

Elizabeth Garrett-Mayer, Ph.D.

Assistant Professor of Oncology, School of Medicine. *Biostatistics, latent variable models; clinical trials; oncology; gene expression.*

Steven N. Goodman, M.D., Ph.D.

Associate Professor of Oncology, School of Medicine. *Biostatistics, Clinical trials.*

Joanne Katz, Sc.D.

Professor of International Health. *Epidemiology, ophthalmology, biostatistics, community trials, blindness, visual impairment, glaucoma, cataract, trachoma, refractive error, ocular trauma, vitamin A, iron, zinc, micronutrients.*

Jeanne Kowalski, Ph.D., M.A.

Assistant Professor in the Department of Oncology of the School of Medicine.

Ellen J. MacKenzie, Ph.D.

Professor of Health Policy and Management. *Cost of Illness, Injury, Trauma, Trauma Systems, Casemix Measurement, Injury Severity Measures, Disability, Clinical Effectiveness, Outcomes Research.*

Curtis L. Meinert, Ph.D.

Professor of Epidemiology. *Clinical trials methodology, design and conduct of multicenter trials, research ethics.*

Lucy A. Meoni, Sc.M.

Research Associate in Internal Medicine, School of Medicine.

Lawrence Moulton, Ph.D.

Associate Professor of International Health. *International Health, Biostatistics; Statistical Epidemiology; Longitudinal Data; Bioassay; Group-Randomized Trials; Vaccine Safety; Vaccine Effectiveness; Vitamin A; HIV/AIDS; Landmines.*

Alvaro Muñoz, Ph.D.

Professor of Epidemiology. *Statistics in Epidemiology, Cohort Studies, Infectious Diseases, Biomarkers, Kidney Disease, Post marketing surveillance, Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS), Survival Analysis, Analysis of Longitudinal Data.*

Giovanni Parmigiani, Ph.D.

Associate Professor of Oncology in the School of Medicine. *Cancer genetics, BRCA1, BRCA2, familial cancer syndromes, computational biology, bioinformatics, genomics, stochastic optimization, Markov Chain Monte Carlo, Bayesian modeling, medical decision making.*

Steven Piantadosi, M.D., Ph.D.

Professor of Oncology, School of Medicine. *Biostatistics, Mathematical models of tumor growth; statistical methods for the design and analysis of clinical trials.*

Fernando J. Pineda, Ph.D.

Associate Professor of Molecular Microbiology and Immunology. *Bioinformatics, Mass Spectrometry, Protein Identification, Proteomics, Neural Networks, Machine Learning, Signal Processing, Statistical Physics.*

William A. Reinke, Ph.D.

Professor of International Health. *International Health, health services research, program evaluation, decision analysis, quality assurance, survey methods, personnel management, functional analysis.*

Matthew Tayback, Sc.D.

Lecturer in the Department of International Health. *Health and Scientific Affairs, Director of Aging, health information systems, biostatistics.*

Qian-Li Xue, Ph.D., M.S.

Assistant Scientist. *Epidemiology, Epidemiological design; latent variable; longitudinal data; measurement error; missing data; multivariate categorical data.*

Departmental Affiliates

Natalie J. Blades, Ph.D., M.S.E.

Associate.

C. Hendricks Brown, Ph.D.

Adjunct Professor.

Peter Diggle, Ph.D.

Adjunct Professor.

Mitchell Gail, M.D., M.P.H.

Adjunct Professor.

Peter A. Lachenbruch, Ph.D.

Adjunct Professor.

Quackenbush, John, Ph.D.

Adjunct Professor.

Steven G. Self, Ph.D.

Associate.

Patrick M. Tarwater, Ph.D.

Adjunct Assistant Professor. *Epidemiology, Biostatistics, Epidemiologic Methods, Survival Analysis, Longitudinal Data Analysis, Epidemic Models.*

Biostatistics

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at <http://commprojects.jhsph.edu/courses/>

140.611 STATISTICAL REASONING IN PUBLIC HEALTH I. (3 units). First term.

McGready, John. Also offered via the Internet, first term. Also offered off-campus, third term.

Provides a broad overview of biostatistical methods and concepts used in the public health sciences, emphasizing interpretation and concepts rather than calculations or mathematical details. Develops ability to read the scientific literature to critically evaluate study designs and methods of data analysis. Introduces basic concepts of statistical inference, including hypothesis testing, p-values, and confidence intervals. Topics include comparisons of means and proportions; the normal distribution; regression and correlation; confounding; concepts of study design, including randomization, sample size, and power considerations; logistic regression; and an overview of some methods in survival analysis. Draws examples of the use and abuse of statistical methods from the current biomedical literature.

Student evaluation: Method of student evaluation based on homework assignments, quizzes and a final exam.

Prerequisites: Introduction to Online Learning.

140.612 STATISTICAL REASONING IN PUBLIC HEALTH II. (3 units). Second term.

McGready, John. Also offered via the Internet, second term. Also offered off-campus, fourth term.

Provides a broad overview of biostatistical methods and concepts used in the public health sciences, emphasizing interpretation and concepts rather than calculations or mathematical details. Develops ability to read the scientific literature to critically evaluate study designs and methods of data analysis. Introduces basic concepts of statistical inference, including hypothesis testing, p-values, and confidence intervals. Topics include comparisons of means and proportions; the normal distribution; regression and correlation; confounding; concepts of study design, including randomization, sample size, and power considerations; logistic regression; and an overview of some methods in survival analysis. Draws examples of the use and abuse of statistical methods from the current biomedical literature.

Student evaluation: Method of student evaluation based on homework assignments, quizzes and a final exam.

Prerequisites: Introduction to Online Learning.

140.615 STATISTICS FOR LABORATORY SCIENTISTS I. (4 units). Third term. Broman, Karl.

Introduces the basic concepts and methods of statistics with applications in the experimental biological sciences. Demonstrates methods of exploring, organizing, and presenting data, and introduces the fundamentals of probability. Presents the foundations of statistical inference, including the concepts of parameters, estimates, and the use of confidence intervals and hypothesis tests. Topics include experimental design, linear regression, the analysis of two-way tables, and sample size and power calculations. Introduces and employs the freely available statistical software, R, to explore and analyze data.

Student evaluation: Each term there are three quizzes, four computer labs and one exam.

140.616 STATISTICS FOR LABORATORY SCIENTISTS II. (4 units). Fourth term. Broman, Karl.

Introduces the basic concepts and methods of statistics with applications in the experimental biological sciences. Demonstrates methods of exploring, organizing, and presenting data, and introduces the fundamentals of probability. Presents the foundations of statistical inference, including the concepts of parameters, estimates, and the use of confidence intervals and hypothesis tests. Topics include experimental design, linear regression, the analysis of two-way tables, and sample size and power calculations. Introduces and employs the freely available statistical software, R, to explore and analyze data.

Student evaluation: Each term there are three quizzes, four computer labs and one exam.

Prerequisites: 140.615.

140.621 STATISTICAL METHODS IN PUBLIC HEALTH I. (4 units). First term. Diener-West, Marie; Bandeen-Roche, Karen.

Introduces the basic concepts and methods of statistics as applied to diverse problems in public health and medicine. Demonstrates methods of exploring, organizing, and presenting data, and introduces fundamentals of probability, including probability distributions and conditional probability, with applications to 2x2 tables.

Presents the foundations of statistical inference, including concepts of population, sample parameter, and estimate; and approaches to inferences using the likelihood function, confidence intervals, and hypothesis tests. Introduces and employs the statistical computing package, STATA, to manipulate data and prepare students for remaining course work in this sequence.

Student evaluation: Student evaluation based on problem sets and exams.

Consent of instructor required.

140.622 STATISTICAL METHODS IN PUBLIC HEALTH II. (4 units). Second term. Diener-West, Marie; Bandeen-Roche, Karen.

Presents use of likelihood functions, confidence intervals, and hypothesis tests to draw scientific inferences from public health data. Discusses null and alternative hypotheses, Type I and II errors, and power. Develops parametric and non-parametric statistical methods for comparing multiple groups (ANOVA). Also introduces measures of association and simple linear regression. Addresses methods for planning a study, including stratification, balance, sampling strategies, and sample size.

Student evaluation: Student evaluation based on problem sets and exams.

Prerequisites: 140.621.

Consent of instructor required.

140.623 STATISTICAL METHODS IN PUBLIC HEALTH III. (4 units). Third term. Diener-West, Marie; Bandeen-Roche, Karen.

Presents use of generalized linear models for quantitative analysis of data encountered in public health and medicine. Specific models include analysis of variance, analysis of covariance, multiple linear regression, logistic regression, and Cox regression.

Student evaluation: Student evaluation based on problem sets and exams.

Prerequisites: 140.622.

Consent of instructor required.

140.624 STATISTICAL METHODS IN PUBLIC HEALTH IV. (4 units). Fourth term. Tonascia, James.

Expands students' abilities to conduct and report the results of a valid statistical analysis of quantitative public health information. Develops more advanced skills in multiple regression models, focusing on log-linear models and on techniques for the evaluation of survival and longitudinal data. Also presents methods for the measurement of agreement, validity, and reliability.

Student evaluation: Student evaluation based on problem sets, a data analysis project, and a final exam.

Prerequisites: 140.623.

Consent of instructor required.

140.632 INTRODUCTION TO THE SAS STATISTICAL PACKAGE. (3 units). Fourth term. Meoni, Lucy.

Familiarizes students with the use of the SAS statistical package and skills needed for effective data management, data manipulation, and data analysis. Students learn how to document and replicate their work. Graphical techniques for displaying data are discussed. Although this course uses the SAS statistical package exclusively, most technical knowledge and computing techniques covered in the course are applicable to any statistical package.

Student evaluation: Student evaluation based on homework and final project.

Prerequisites: 140.622 or 140.652 (may be taken concurrently), or former 140.602.

Consent of instructor required.

140.636 BIOCOMPUTING I:PERL FOR BIOINFORMATICS. (4 units). Second term. Pineda, Fernando.

Uses the PERL programming language to introduce skills and concepts needed to process and interpret data from high-throughput technologies in the biological sciences. Key concepts are introduced and reinforced through lectures with live computer demonstrations, weekly readings, and programming exercises. Exercises and examples draw heavily from biological sequence analysis as well as real-world problems in proteomics and genetics. Guest lecturers present case studies of PERL and UNIX usage in scientific investigations. Students are introduced to bioinformatics software-development resources available online and to necessary computer science fundamentals.

Student evaluation: Student evaluation based on homework and programming project.

Prerequisites: Required course for planned degree program (MHS) in bioinformatics.

Consent of instructor required.

140.637 BIOLOGICAL DATABASES AND DISTRIBUTED COMPUTING. (3 units). Third term. Pineda, Fernando.

Provides students with the principles and skills required to implement biological databases and their web-based interfaces. Presents essential notions of distributed computing on the worldwide web. Includes the fundamentals of TCP/IP, client-server model, http protocol, server-side and client-side scripting with CGI and PHP and Javascript. Presents the principles of biological database design using relational and object-oriented database models and management systems (e.g. MySQL and Zope). Topics include SQL, database design, normalization, optimization and ER modeling. Discusses biological database interoperability, with e.g. XML, XML schema, and ontologies (i.e. GO). Guest lectures provide insights into significant biological database projects such as the Human Protein Reference Database (HPRD) and DRAGON. As a final project, students develop and publish a database-driven web-based application for a biological application.

Student evaluation: Homework and final project.

Prerequisites: 140.636, or consent of instructor.

140.638 ANALYSIS OF BIOLOGICAL SEQUENCES. (3 units). Second term. Parmigiani, Giovanni.

Provides statistical foundations and an overview of the core algorithms of sequence analysis. Topics covered will include background on probability (including conditional probabilities and Bayes' rule), Markov Models, Hidden Markov Models, and multiple hypothesis testing. Sequence analysis algorithms will include alignment (pairwise local alignment, heuristic local alignment such as Blast and Fasta, optimal pairwise local alignment, i.e. Smith-Waterman, pairwise global alignment and multiple alignment), gene finding (Glimmer) and Phylogenetic trees.

Student evaluation: Homework and final exam.

Prerequisites: 140.651, 120.602 (or consent of instructor, with evidence of similar training).

Consent of instructor required.

140.640 STATISTICAL METHODS FOR SAMPLE SURVEYS. (3 units). Third term.

Ahmed, Saifuddin. Jointly offered with the Department of Population and Family Health Sciences.

Presents construction of sampling frames, area sampling, methods of estimation, stratified sampling, subsampling, and sampling methods for surveys of human populations. Students use STATA or another comparable package to implement designs and analyses of survey data. (380.712 develops additional practical skills in sampling.)

Student evaluation: Student evaluation based on homework and a final exam.

Prerequisites: 140.622, former 140.602, or 140.652.

140.641 SURVIVAL ANALYSIS. (3 units). Third term. Wang, Mei-Cheng.

Discusses the basic concepts of survival analysis, including hazard functions, survival functions, types of censoring, Kaplan-Meier estimates, logrank tests, and the generalized Wilcoxin tests. Parametric inference includes the exponential and Weibull distribution. Discusses the proportional hazard models and extensions to time-dependent covariates. Clinical and epidemiological examples illustrate the various statistical procedures.

Student evaluation: Student evaluation based on problem sets and an exam.

Prerequisites: 140.622 or former 140.602.

140.642* DESIGN OF CLINICAL

EXPERIMENTS. (3 units). First term. Piantadosi, Steve. Next offered 2005-2006.

Introduces the application of traditional experimental design theory to biomedical control experiments, including event time studies. Stresses methods of bias and variability, particularly randomization, blocking, factorial designs, stratification, and adequate sample size.

Emphasizes clinical trials and other types of medical experiments likely to be encountered by biometric researchers. Discusses elements of analysis when they relate to the design principles.

Student evaluation: Student evaluation based on problem sets and a short protocol for a designed experiment.

Prerequisites: 140.621-622, former 140.601-602, or equivalent.

140.644 STATISTICAL LEARNING: ALGORITHMIC AND NONPARAMETRIC APPROACHES. (4 units). Third term. Irizarry, Rafael.

Teaches students to use modern, computationally-based methods for exploring and drawing inferences from data. After a brief review of probability, the central limit theorem, and inference, the course covers resampling methods, nonparametric regression, prediction, and dimension reduction and clustering. Specifically covers: Monte Carlo simulation, bootstrap cross-validation, splines, local weighted regression, CART, random forests, neural networks, support vector machines, and hierarchical clustering.

Student evaluation: Homework.

Prerequisites: Successful completion of 140.611-12 or 140.621-24; or working knowledge of calculus and linear algebra.

140.651 METHODS IN BIOSTATISTICS I. (4 units). First term. Brookmeyer, Ron. Former course number 140.650.

Presents fundamental concepts in applied probability, exploratory data analysis, and statistical inference, focusing on probability and analysis of one and two samples. Topics include discrete and continuous probability models; expectation and variance; central limit theorem; inference, including hypothesis testing and confidence for means, proportions, and counts; maximum likelihood estimation; sample size determinations; elementary non-parametric methods; graphical displays; and data transformations.

Student evaluation: Student evaluation based on several problem sets and one exam each term.

Prerequisites: Working knowledge of calculus and linear algebra.

140.652 METHODS IN BIOSTATISTICS II. (4 units). Second term. Brookmeyer, Ron. Former course number 140.651.

Presents fundamental concepts in applied probability, exploratory data analysis, and statistical inference, focusing on probability and analysis of one and two samples. Topics include discrete and continuous probability models; expectation and variance; central limit theorem; inference, including hypothesis testing and confidence for means, proportions, and counts; maximum likelihood estimation; sample size determinations; elementary non-parametric methods; graphical displays; and data transformations.

Student evaluation: Student evaluation based on several problem sets and one exam each term.

Prerequisites: 140.651.

140.653 METHODS IN BIOSTATISTICS III. (4 units). Third term. Zeger, Scott. Former course number 140.652.

Focuses on regression analysis for continuous and discrete data, and data analyses that integrate the methods learned in 140.651-652. Regression topics include simple linear regression; a matrix formulation of multiple linear regression; inference for coefficients, predicted values, and residuals; tests of hypotheses; graphical displays and regression diagnostics; specific models, including polynomial regression, splines, one- and two-way ANOVA; variable selection non-parametric regression; log-linear models for incidence rates and contingency tables; logistic regression; and generalized linear models.

Student evaluation: Student evaluation based on problem sets, a data analysis project, and one exam each term.

Prerequisites: 140.652.

140.654 METHODS IN BIOSTATISTICS IV. (4 units). Fourth term. Zeger, Scott. Former course number 140.653.

Focuses on regression analysis for continuous and discrete data, and data analyses that integrate the methods learned in 140.651-652. Regression topics include simple linear regression; a matrix formulation of multiple linear regression; inference for coefficients, predicted values, and residuals; tests of hypotheses; graphical displays and regression diagnostics; specific models, including polynomial regression, splines, one- and two-way ANOVA; variable selection non-parametric regression; log-linear models for incidence rates and contingency tables; logistic regression; and generalized linear models.

Student evaluation: Problem sets, a data analysis project, and one exam each term.

Prerequisites: 140.651-653.

140.655 ANALYSIS OF LONGITUDINAL DATA. (4 units). Third term. Dominici, Francesca.

Covers statistical models for drawing scientific inferences from longitudinal data. Topics include longitudinal study design; exploring longitudinal data; linear and generalized linear regression models for correlated data, including marginal, random effects, and transition models; and handling missing data. Intended for doctoral students in quantitative sciences.

Student evaluation: Student evaluation based on analysis of a longitudinal data set, presentation of the results, and a written scientific report of the analysis methods and results.

Prerequisites: 140.621-624, former 140.601-604, or 140.651-654.

Consent of instructor required.

140.656 MULTILEVEL STATISTICAL MODELS IN PUBLIC HEALTH. (4 units).

Fourth term. Louis, Thomas A.

Conceptual and formal approaches to the design, analysis, and interpretation of studies with a “multilevel” or “hierarchical” (clustered) data structure (e.g., individuals in families in communities). Development and implementation of random effects, variance component models that reflect the multi-level structure for both predictor and outcome variables. Topics include: building hierarchies; interpretation of population-average and level-specific summaries; estimation and inference based on variance components; shrinkage estimation; diagnostics and sensitivity analyses; and STATA and SAS software implementation. Applications to health services, community intervention and small area estimation.

Student evaluation: Midterm exam, homework, and a data analysis project.

Prerequisites: 140.621-24 or 140.651-4 required; 140.655 recommended.

140.658 STATISTICS FOR PSYCHOSOCIAL RESEARCH: STRUCTURAL MODELS. (4 units).

Second term. Garrett-Mayer, Elizabeth. Jointly offered with the Department of Mental Health.

Presents quantitative approaches to theory construction in the context of multiple response variables, with models for both continuous and categorical data. Topics include the statistical basis for causal inference; principles of path analysis; linear structural equation analysis incorporating measurement models; latent class regression; and analysis of panel data with observed and latent variable models. Draws examples from the social sciences, including the status attainment approach to intergenerational mobility, behavior genetics models of disease and environment, consumer satisfaction, functional impairment and disability, and quality of life.

Student evaluation: Student evaluation based on class participation, problem sets, and a final exam.

Prerequisites: 330.657 or consent of instructor.

Consent of instructor required.

140.662 SPATIAL ANALYSIS AND GIS I. (3 units). Third term. Curriero, Frank; Glass, Gregory. Jointly offered with the Department of Molecular Microbiology and Immunology.

Examines the use of Arc View Geographic Information System (GIS) software as a tool for integrating, manipulating, and displaying public health-related spatial data. Topics covered include mapping, geocoding, and manipulations related to data structures and topology. Selected case studies are used to demonstrate concepts. Focuses on using GIS to generate and refine hypotheses about public health-related spatial data in preparation for a formal statistical analysis. Although spatial statistical modeling is not a required part of the curriculum, related topics are discussed throughout.

Student evaluation: Assignments and exam.

Prerequisites: 140.611-612 or statistical equivalent.

Consent of instructor required.

140.663 SPATIAL ANALYSIS AND GIS II. (3 units). Fourth term. Curriero, Frank; Glass, Gregory. Jointly offered with the Department of Molecular Microbiology and Immunology.

Introduces the statistical techniques used to model, analyze, and interpret public health-related spatial data. Generalized linear mixed models will be presented as a general framework for analyzing spatially dependent data. Some topics covered include the geostatistical techniques of kriging and variogram analysis and point process methods for spatial case control analyses. Although the focus is on statistical modeling, some time is spent covering topics related to clustering and cluster detection of disease events. Although helpful, knowledge of specific GIS software is not required. Instruction in the public domain statistical package R, to be used for analyses, will be provided.

Student evaluation: Assignments and exam.

Prerequisites: 140.621-.624 or 140.651-.654.

140.665 CAUSAL INFERENCE. (3 units).

Fourth term. Frangakis, Constantine.

Presents principles, methods, and applications in drawing cause-effect inferences with a focus on the health sciences. Introduces and discusses the role of potential outcomes and treatment assignment mechanisms for drawing causal inferences; studies completely randomized assignments; known unconfounded assignments, covariates, and the role of Fisher's, Neyman's and Bayesian methods; ignorable assignments, propensity scores and sensitivity analysis; nonignorable assignments arising from deviations to protocol, treatment-noncompliance, direct and indirect effects, methods of instrumental variables, loss to follow-up and methods of latent ignorability, and encouragement designs.

Student evaluation: Student evaluation based on problem sets and a final project.

Prerequisites: 140.654 or equivalent for matrix representation of multiple linear and logistic regression.

140.668 SPECIAL TOPICS IN GENETICS AND GENOMICS. (3 units). Second term.

Broman, Karl; Irizarry, Rafael; Liang, Kung-Yee; Ruczinski, Ingo.

Addresses statistical issues in genetics and genomics. Consists of two four-week modules, with revolving instructors and topics. Possible topics include the following: genetic mapping in experimental organisms; genetic map construction; linkage analysis in humans; linkage disequilibrium in humans; population genetics; phylogenetic inference; topics in protein structure; microarray analysis; and proteomics.

Prerequisites: 140.651-654; knowledge of the computer package R.

140.671 INTRODUCTION TO PROBABILITY

I. (4 units). First term. Rohde, Charles. Former course number 140.681.

Introduces probability theory, including basic concepts in measure theory and probability; random variables and their distributions; moments of random variables and probability inequalities; moment-generating and characteristic functions; convergence concepts and limit theorems; transformation and order statistics.

Student evaluation: Student evaluation based on homework and one exam per term.

Prerequisites: Facility with calculus.

140.672 INTRODUCTION TO

PROBABILITY II. (4 units). Second term.

Rohde, Charles. Former course number 140.682.

Introduces probability theory, including basic concepts in measure theory and probability; random variables and their distributions; moments of random variables and probability inequalities; moment-generating and characteristic functions; convergence concepts and limit theorems; transformation and order statistics.

Student evaluation: Student evaluation based on homework and one exam per term.

Prerequisites: 140.671.

140.673 INTRODUCTION TO STATISTICAL THEORY I. (4 units). Third term. Wang,

Mei-Cheng. Former course number 140.683.

Introduces modern statistical theory, including likelihood functions; minimal sufficiency; exponential families; theory estimation, theory of optimal tests, and confidence intervals; robustness; and decision theory.

Student evaluation: Student evaluation based on homework and one exam per term.

Prerequisites: 140.671-672.

140.674 INTRODUCTION TO STATISTICAL THEORY II. (4 units). Fourth term. Wang,

Mei-Cheng. Former course number 140.684.

Introduces modern statistical theory, including likelihood functions; minimal sufficiency; exponential families; theory estimation, theory of optimal tests, and confidence intervals; robustness; and decision theory.

Student evaluation: Student evaluation based on homework and one exam per term.

Prerequisites: 140.671-673.

140.688 STATISTICS FOR GENE

EXPRESSION. (3 units). Fourth term. Irizarry, Rafael.

Introduces statistical concepts and tools necessary to interpret and critically evaluate the literature on gene expression array data, and perform basic analysis of gene expression array data. Includes an overview of oligonucleotide analysis, normalization, identification of differentially expressed gene, clustering, classification, and statistical pattern recognition. Interested students are encouraged to visit the course website at <http://www.biostat.jhsph.edu/~ririzar/688/>.

Student evaluation: Student evaluation based on microarray data analysis project.

Prerequisites: 140.621-624 or equivalent.

140.693 ADVANCED PROBABILITY I. (3 units). Third term. Tan, Zhiqiang.

140.693-694 provide a measure theoretic development of probability theory needed for the advanced study of statistics. Topics include measure spaces and measures, events, random variables, independence, integration, expectation, laws of large numbers and central limit theorems, conditional expectations, martingales, and Markov chains.

Student evaluation: Student evaluation based on problem sets, a midterm exam, and a final exam.

Prerequisites: 140.671-2; Dept of Mathematics courses 110.405-406 (Analysis I-II) or equivalent.

Consent of instructor required.

140.694 ADVANCED PROBABILITY II. (3 units). Fourth term. Tan, Zhiqiang.

140.693-694 provide a measure theoretic development of probability theory needed for the advanced study of statistics. Topics include measure spaces and measures, events, random variables, independence, integration, expectation, laws of large numbers and central limit theorems, conditional expectations, martingales, and Markov chains.

Student evaluation: Student evaluation based on problem sets, a midterm exam, and a final exam.

Prerequisites: 140.693.

Consent of instructor required.

140.751 ADVANCED GENERALIZED

LINEAR MODELS I. (3 units). First term. Ruczinski, Ingo. Former course number 140.750.

Reviews linear algebra and develops the least squares approach to linear models through projections. Topics include linear estimability, the Gauss Markov theorem, and distribution theory under normality assumptions. Develops principle of conditional error for testing linear hypothesis and discusses connections with maximum likelihood. 140.752 applies those theories to standard experimental designs. Presents random and mixed effects models, and best linear unbiased prediction. Introduces methods of statistical learning, including multivariate adaptive regression splines, classification and regression trees, boosting and bagging.

Student evaluation: Student evaluation based on homework and a final exam.

Prerequisites: 140.673-674 & elementary course in matrix algebra; students must also register for 140.752.

140.752 ADVANCED GENERALIZED

LINEAR MODELS II. (3 units). Second term. Ruczinski, Ingo. Former course number 140.751.

140.751 reviews linear algebra and develops the least squares approach to linear models through projections. Topics include linear estimability, the Gauss Markov theorem, and distribution theory under normality assumptions. Develops principle of conditional error for testing linear hypothesis and discusses connections with maximum likelihood. 140.752 applies those theories to standard experimental designs. Presents random and mixed effects models, and best linear unbiased prediction. Introduces methods of statistical learning, including multivariate adaptive regression splines, classification and regression trees, boosting and bagging.

Student evaluation: Student evaluation based on homework and a final exam.

Prerequisites: 140.751.

140.753 ADVANCED GENERALIZED LINEAR MODELS III. (3 units). Third term. Crainiceanu, Ciprian. Former course number 140.752.

140.753 reviews the extension of linear models to generalized linear models. Topics include exponential family models, link function, and over-dispersion. Emphasis is given to models for dichotomous and polytomous outcomes with some development of methods for clustered data. Specific topics include: logistic and probit regression, proportional odds and continuation ratio logit models for polytomous outcomes, quasi-likelihood, the beta-binomial model and conditional logistic regression. 140.754 reviews key topics in modern applied statistics. This course extends topics of 140.753 to encompass methods for clustered and longitudinal data and semi-parametric methods. Topics include: Poisson log-linear models, models for matched pairs, marginal models, generalized estimating equations, transition models, generalized linear mixed models, scatter-plot smoothing, and generalized additive models. Emphasis is given both to rigorous development and to practical data analytic strategies.

Student evaluation: Student evaluation based on homework and a final exam.

Prerequisites: 140.751-752; Students must also register for 140.754.

140.754 ADVANCED GENERALIZED LINEAR MODELS IV. (3 units). Fourth term. Caffo, Brian. Former course number 140.753.

140.753 reviews the extension of linear models to generalized linear models. Topics include exponential family models, link function, and over-dispersion. Emphasis is given to models for dichotomous and polytomous outcomes with some development of methods for clustered data. Specific topics include: logistic and probit regression, proportional odds and continuation ratio logit models for polytomous outcomes, quasi-likelihood, the beta-binomial model and conditional logistic regression. 140.754 reviews key topics in modern applied statistics. This course extends topics of 140.753 to encompass methods for clustered and longitudinal data and semi-parametric methods. Topics include: Poisson log-linear models, models for matched pairs, marginal models, generalized estimating equations, transition models, generalized linear mixed models, scatter-plot smoothing, and generalized additive models. Emphasis is given both to rigorous development and to practical data analytic strategies.

Student evaluation: Student evaluation based on homework and a final exam.

Prerequisites: 140.751-753.

140.763* BAYESIAN METHODS. (3 units). Third term. Dominici, Francesca. Next offered 2005-2006.

Illustrates current approaches to Bayesian modeling and computation in statistics. Describes simple familiar models, such as those based on normal and binomial distributions, to illustrate concepts such as conjugate and noninformative prior distributions. Covers advanced tools, including linear regression, hierarchical models (random effect models), generalized linear models, and mixed models. Discusses aspects of modern Bayesian computational methods, including Markov Chain Monte Carlo methods (Gibbs' sampler and Metropolis Hastings algorithm) and their implementation and monitoring, and examples of real statistical analyses.

Student evaluation: Student evaluation based on homework and a final project.

Prerequisites: 140.673-674 or equivalent.

Consent of instructor required.

* Not offered every year as indicated.

140.771 ADVANCED STATISTICAL THEORY

I. (4 units). First term. Scharfstein, Daniel. Former course number 140.780.

140.771 presents approaches to estimating functions, likelihood methods, ancillary and sufficient statistics, optimality criterion, and asymptotic theory. Discusses the concept of Fisher information in the absence/presence of nuisance parameters; various ancillarity concepts; and conditional, partial, empirical and profile likelihoods. Introduces U-statistics, connects them to well-known test statistics, and develops their asymptotic properties via Hajek projection techniques. 140.772 discusses the asymptotic theory for parametric inference, covering consistency and asymptotic normality for maximum likelihood and M-estimators, with some discussion of Edgeworth and Saddlepoint expansion.

Student evaluation: Student evaluation based on one mid-term exam and one project per term.

Prerequisites: 140.673-674, 140.692-694, and knowledge of laws of large numbers and central limit theorem.

140.772 ADVANCED STATISTICAL

THEORY II. (4 units). Second term. Scharfstein, Daniel.

140.771 presents approaches to estimating functions, likelihood methods, ancillary and sufficient statistics, optimality criterion, and asymptotic theory. Discusses the concept of Fisher information in the absence/presence of nuisance parameters; various ancillarity concepts; and conditional, partial, empirical and profile likelihoods. Introduces U-statistics, connects them to well-known test statistics, and develops their asymptotic properties via Hajek projection techniques. 140.772 discusses the asymptotic theory for parametric inference, covering consistency and asymptotic normality for maximum likelihood and M-estimators, with some discussion of Edgeworth and Saddlepoint expansion.

Student evaluation: Student evaluation based on one mid-term exam and one project per term.

Prerequisites: 140.771.

140.773 FOUNDATIONS OF STATISTICS I.

(4 units). Third term. Parmigiani, Giovanni. Former course number 140.781.

Gives an overview of fundamental ideas and results about rational decision making under uncertainty, highlighting the implications of these results for statistical practice. The course covers four main areas: axiomatic foundations (coherence, scoring rules, axiomatic utility theory, Savage's theory, Allais' and Ellsberg's paradoxes), decision analysis with biomedical applications (utility elicitation, decision trees, cost-effectiveness analysis); statistical decision theory (completeness, admissibility, Stein estimation, model choice); and optimal design of experiments (value of information analysis, backwards induction, optimal sample size). These topics have emerged from the study of decision making in a number of disciplines and from a variety of perspectives: they are presented in a unified framework while respecting and highlighting the different and sometimes conflicting original perspectives. Special attention is given to a set of key original papers. Students are encouraged to think from first principles and to develop their own overall philosophical perspective of decision making and statistical inference.

Student evaluation: Student evaluation based on homework and a final exam at the end of 140.774.

Prerequisites: 140.772.

140.774 FOUNDATIONS OF STATISTICS II.

(4 units). Fourth term. Rohde, Charles. Former course number 140.782.

Investigates the foundations of statistics as applied to assessing the evidence provided by an observed set of data. Topics include: law of likelihood, the likelihood principle, evidence and the likelihood paradigm for statistical inference; failure of the Neyman-Pearson and Fisherian theories to evaluate evidence; marginal, conditional, profile and other likelihoods; and applications to common problems of inference.

Student evaluation: Student evaluation based on problem sets and class presentation of solutions to the problem sets.

Prerequisites: 140.773.

140.776 STATISTICAL COMPUTING. (3 units). First term. Caffo, Brian.

Covers practical issues in statistical computing. Includes programming in R, calling compiled code from R, accessing R libraries, creating R packages with documentation, programming in C, debugging, organizing and commenting code, working in Emacs, LATEX typesetting, literate programming, using computer algebra packages, and high-performance computing in UNIX and LATEX. Topics in numerical linear algebra provide working examples.

Student evaluation: Projects.

Prerequisites: 140.621 or equivalent.

140.778 ADVANCED STATISTICAL COMPUTING. (3 units). Third term. Caffo, Brian.

Covers the theory and application of common algorithms used in statistical computing. These include root finding algorithms, optimization algorithms, numerical integration methods, Monte Carlo, Markov chain Monte Carlo, stochastic optimization and bootstrapping. Some specific algorithms discussed include: Newton/Raphson, EM, Gibbs Sampling, the Metropolis/Hastings/Green algorithm, simulated annealing, Gaussian quadrature, Romberg integration, etc. Students are required to use LATEX for typesetting and R for computing.

Student evaluation: Computing and theoretical assignments.

Prerequisites: Prior programming experience; at least one year of doctoral-level statistics/biostatistics theory and methods courses; 140.776.

140.794* ADVANCED SURVIVAL ANALYSIS. (3 units). Fourth term. Scharfstein, Daniel. Not offered 2005-2006.

Discusses the counting process approach to the analysis of censored failure time data, then revisits standard statistical methods in survival analysis, including the Nelson-Aalen estimator of the cumulative hazard function, the Kaplan-Meier estimator of the survivor function, the weighted log rank statistics, the Cox proportional hazards regression model, and the accelerated failure time model. All of the estimators and test statistics are shown to be equal to or are approximated by stochastic integrals with respect to martingales. This structure is then exploited to establish their asymptotic properties. Data from an actual clinical trial is used as a background theme throughout. Students complete theoretical exercises and write computer programs implementing some of the methods and applying them to the data set.

Student evaluation: Student evaluation based on a series of problem sets.

Prerequisites: 140.641, 140.651-654, 140.671-674, 140.771-772, programming exp (C, FORTRAN, S, OR MATLAB).

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

Investigations conducted under faculty direction may lead to theses, publications, or other reports.

140.800 MPH CAPSTONE BIostatISTICS. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

140.820 THESIS RESEARCH BIostatISTICS. (variable units). First, second, third and fourth terms.

* Not offered every year as indicated.

140.830 POSTDOCTORAL RESEARCH

BIostatISTICS. (variable units). First, second, third and fourth terms.

140.840 SPECIAL STUDIES AND RESEARCH

BIostatISTICS. (variable units). First, second, third and fourth terms.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

330.657 STATISTICS FOR PSYCHOSOCIAL RESEARCH: MEASUREMENT. See Department of Mental Health.

340.631 METHODS IN GENETIC EPIDEMIOLOGY I. See Department of Epidemiology.

340.632 METHODS IN GENETIC EPIDEMIOLOGY II. See Department of Epidemiology.

380.712 METHODS IN ANALYSIS OF LARGE POPULATION SURVEYS. See Department of Population and Family Health Sciences.

390.612* DESIGN AND ANALYSIS OF CLINICAL TRIALS. See Clinical Investigation Courses.

390.671 DESIGN OF CLINICAL STUDIES. See Clinical Investigation Courses.

390.672 QUANTITATIVE ANALYSIS OF CLINICAL DATA. See Clinical Investigation Courses.

550.691 QUANTITATIVE METHODS IN PUBLIC HEALTH I. See Extradepartmental Courses.

550.692 QUANTITATIVE METHODS IN PUBLIC HEALTH II. See Extradepartmental Courses.

550.693 QUANTITATIVE METHODS IN PUBLIC HEALTH III. See Extradepartmental Courses.

* Not offered every year as indicated.

Environmental Health Sciences

PURPOSE

Environmental Health Sciences is a broad, interdisciplinary field that focuses on the effects of biological, chemical, and physical environmental agents on humans. Activities within this extensive field include studies of the body's response to environmental agents at the molecular, cellular, organ system, and whole-body levels; studies of environmental risk assessment and management (including environmental engineering and law and policy solutions); epidemiological studies; basic science research to provide mechanistic analyses of the effects of environmental agents; and the development of techniques with which to prevent and control these effects. The Department of Environmental Health Sciences is committed to the performance of the highest quality mechanism-based research, and the application of this research to problems associated with the adverse impact on human health of chemical, physical, and biologic agents in the environment, regardless of whether these agents occur naturally or are introduced into the environment by humans. The faculty educate professionals to conduct research and practical problem-solving in academic, government, and occupational settings, and in the general community. We work with government agencies, private sector organizations, and community groups in the definition, analysis, and solution of health problems generated by environmental agents. The faculty comprise a diverse group of highly specialized scientists, physicians, nurses, and engineers who coordinate their scientific expertise and professional skills to solve the problems of air pollution and air quality, occupational safety and health, toxic substances and hazardous wastes, and ionizing and non-ionizing radiation. The department is focused on the development of techniques for the systemic evaluation and quantification of risk associated with exposure to potentially hazardous agents, and it is committed to the development of improved methods of risk assessment, risk management, risk communication, and prevention technologies.

MAJOR EDUCATIONAL AREAS AND PROGRAMS

Environmental Health Sciences is a multidisciplinary field, in which participants pursue a deeper understanding of the effects of various natural and human-made environmental agents on the biological structures at every level of organization from the molecule to the organism. Consequently, applicants to the Department of Environmental Health Sciences seeking graduate education come from widely differing backgrounds. Most seek advanced education in one of the more specific disciplines through master's or doctoral programs that reside within a specific division of the department. These are described under each division's heading. However, some seek a more generalized appreciation of the interaction between biological substrate and environment, as well as the legislation, regulatory actions, and enforcement pertinent to the environment. Thus, the department also offers two broader degree programs, the DrPH in Environmental Health and the MHS in Environmental Health, as outlined below. For more information about programs or courses offered by the Department of Environmental Health Sciences or to locate application information, please visit our website at www.jhsph.edu/Dept/EHS/index.html. To speak to a representative of the department or to arrange a campus visit to meet with faculty and current students, please contact Patty Scott at 410-955-2212 (phone), or pscott@jhsph.edu (email).

Doctor of Public Health Program in Environmental Health

The goal of the Doctor of Public Health in Environmental Health Program is the development of senior-level professionals with sufficient understanding of the biomedical sciences, behavioral sciences, epidemiology and biostatistics, legal, economic and social issues, engineering technologies, management technologies, management concepts and communication skills to be able to analyze and assess complex environmental risks and problems and to be able to offer sound guidance and advice for the reduction of these risks and the resolution of environmental problems. The graduate is a practitioner who can comprehend and integrate the many dimensions of environmental health sciences, define the disciplines that can best be applied to a problem, make sound and critical judgment and interpret his or her recommendations clearly in the decision-making processes of policy formulation in industry, government, or academia. Graduates are expected to communicate and convey information

effectively to the public as well. In order to be accepted into the DrPH program in Environmental Health Sciences, an individual must meet the basic admission requirements of the School and the department. The School also sets minimum academic requirements for the program, on which the department imposes additional requirements. These requirements include a certain amount of formal coursework, a written comprehensive examination, a preliminary oral examination, an acceptable dissertation, and a final oral examination. In general, a minimum of four consecutive terms of registration as a doctoral student in full-time residence is required for all doctoral degrees. The requirement may be waived on an individual basis, but this is not common.

The School of Public Health has articulated the following general requirements for all DrPH students:

- MPH core requirements (see the Academic Information chapter of this catalog)
- Three epidemiology courses (one can be a course listed under “specialized epidemiology courses” below)
- Four biostatistics courses
- The DrPH seminar series (one hour per week)
- A course in ethics

The department has the following requirements for its DrPH students:

- Fundamentals of Occupational Health
- Principles of Toxicology
- Principles of Industrial Hygiene
- Environmental Health
- Introduction to the Risk Sciences and Public Policy

In addition to required courses, at least four of the following courses are also required, in either or both emphasis areas: Courses with a greater emphasis in occupational health:

- Occupational Safety and Health Management
- Introduction to Ergonomics
- Occupational and Environmental Medicine
Advanced Topics in Occupational Health Nursing
- Occupational Health

Courses with a greater emphasis in environmental health:

- Food- and Water-Borne Diseases
- The Global Environment and Public Health
The Health Effects of Indoor and Outdoor Air Pollution
- Environmental Law & Policy and the Protection of Human Health

- Environmental and Occupational Health Policy
In addition to required and specialty area courses, two of the following specialized epidemiology courses are required:

- Molecular Epidemiology and Biomarkers in Public Health
- Environmental Epidemiology
- Occupational Epidemiology

Master of Health Science in Environmental Health

The Master of Health Science (MHS) in Environmental Health is intended to provide a generalized, systematic introduction to environmental health sciences. The program is intended for experienced government or industry employees who desire to become more qualified in environmental health issues; physicians seeking training in the environmental factors involved in disease and health; and exceptionally talented baccalaureate graduates who want a broad exposure to environmental studies to help identify long-term career goals, and provide a foundation for further education and training. The MHS graduate will have substantive competence in at least five of the following seven areas: (1) basic biological mechanisms; (2) toxicology; occupational or environmental disease from either (3) an engineering or (4) medical perspective; (5) statistical evaluation of data; (6) epidemiological studies in environmental health; and (7) legal and regulatory issues in environmental health. The student works with a faculty advisor to design a program that satisfies these requirements in the context of the student’s interest and career goals. Required courses include Environmental Health, Toxicology, Physiology, Epidemiology, Risk Sciences, and Biostatistics. Students may enroll for up to two courses in other schools of the University offering graduate level environmental sciences programs. In addition to successful completion of coursework, MHS students are required to prepare an essay addressing an environmental health problem, and make a formal presentation of the topic to an audience of faculty and students. No written or oral comprehensive examination is required for this degree. The departmental MHS program is designed to maximize flexibility in a given student’s curriculum. Accordingly, students develop their own course plan, in consultation with their advisor, who must ultimately approve the plan. As a guide, the following courses are available and recommended for those students wishing in-depth, focused study in one of the following areas: environmental health, occupational health, physiology, or toxicology.

List of Required courses:

- Environmental Health Fundamentals of Human Physiology
- Principles of Toxicology
- Principles of Epidemiology
- Introduction to the Risk Sciences and Public Policy
- One Biostatistics course
- Research Ethics and Integrity or Research Ethics or equivalent ethics course
- Public Health Perspectives

Note: For students interested in professional training in Occupational and Environmental Hygiene, a special, accredited MHS program exists; please see the description under the Division of Environmental Health Engineering for this program.

The MHS in Environmental Health Sciences is one of three part-time master's level programs in the broad area of environmental sciences offered by the University. The others are in the Zanvyl Krieger School of Arts and Sciences, <http://www.jhu.edu/pgp-as>, and the Whiting School of Engineering, <http://www.jhu.edu/pte>.

The three programs have a collaborative arrangement in which a student in one of the programs may take up to two elective courses from an approved list in the other two programs.

Academic Divisions and Programs

Disciplinary programs are housed under one of the four academic divisions within the department, which include Toxicological Sciences, Physiology, Environmental Health Engineering, and Occupational and Environmental Health.

Toxicological Sciences

The major theme of research and training by the faculty of the Division of Toxicological Sciences is mechanisms of toxicity in cells, tissues, and organisms at the chemical, biochemical, cellular, and molecular levels. Faculty research programs involve investigation of the mechanisms of toxicity of environmental agents, the mechanisms controlling host responses to environmental toxicants, the potential hazards of exposure to such agents, and methods for protecting the exposed host from environmentally induced disease. Emphasis is on cellular macromolecules and biochemical/molecular processes as targets for environmental toxicants. Predoctoral trainees receive basic training in toxicology as well as cell biology, biochemistry, molecular biology, physiology, and biostatistics. They also gain initial

research experience through research rotations in the laboratories of division faculty. Following completion of basic course work and laboratory rotations, trainees proceed to advanced training in a selected area of concentration, including biochemical/molecular toxicology, neurotoxicology, immunotoxicology, molecular biomarkers, and in vitro toxicology. The diverse interests represented in the division provide its pre- and postdoctoral trainees with a unique interdisciplinary background in toxicology that will ultimately permit them to address toxicologic problems in comprehensive and innovative ways. Facilities available to the division for research and training activities include inhalation laboratories for acute and chronic animal exposures, small animal imaging, HPLC, mass spectrometry, flow cytometry, and scanning and transmission electronmicroscopy, as well as equipment and facilities for molecular genetic techniques, cell culture, and microbiology.

Physiology

Physiology is defined as "the branch of biology dealing with the processes, activities, and dynamics of life and living organisms." Physiology thus differs from other basic biologic sciences in that its end point is on function, rather than on the individual processes that contribute to that function. Traditional physiologic approaches have emphasized studies in intact animals and organs, but to the extent that technology allows probing and experimentation into cellular and molecular compartments, modern physiologic studies extend the living system to those levels. This division has a primary focus on the physiology of the lung. Lung disease is a major international public health problem, and the lung is also the major target organ for environmental air pollutants. Faculty and students are investigating the basic mechanisms involved in lung disease and the interactions with toxic gases and air-borne particles. Specific research interests include the regulation of airway smooth muscle and epithelium; the pathophysiologic effects of air pollutants; genetic regulation of lung repair; airway inflammation; and human exposures. The research spectrum is broadly based, with investigators working at the system, organ, cellular, and molecular levels. Strong collaboration in both research and training exists with the Respiratory Division of the Department of Medicine and the Department of Anesthesiology. Close cooperation with these clinical departments provides input that helps maintain a practical relevance to the basic research.

Environmental Health Engineering

The mission of the Division of Environmental Health Engineering (DEHE) is to improve public health through interdisciplinary research, professional training, and practice. We seek to prevent or minimize the adverse effects of physical, chemical, and biological agents by identifying and studying their sources, fate, and transport in both occupational and non-occupational environments, and by developing and evaluating engineering control strategies that effectively protect human health. Exposure assessment is an integrating theme for DEHE because of its critical linkage to risk assessment. Research and training in exposure assessment in DEHE employs principles and methods in chemistry, biology, physics, and mathematical modeling and includes development and evaluation of biomarkers of exposure. We study all potential routes of human exposure with particular emphasis on air and water. We provide an accredited program in Occupational and Environmental Hygiene and our activities are supported by a number of education and research centers: Center for Water and Health; NIEHS Center in Urban Environmental Health; Education and Research Center in Occupational Health and Safety; Center for Childhood Asthma in the Urban Environment; and the Training Program in Environmental Health. Research training in the division occurs within PhD, ScD, and ScM programs. Professional training is provided within the MHS Occupational and Environmental Hygiene Program. Professional training is intended for individuals pursuing professional careers in environmental and/or occupational health. Research training is designed for individuals wishing to pursue research careers. In addition, divisional faculty advise students as a part of the departmental Dr. P.H. program.

Professional Training—Occupational and Environmental Hygiene MHS Program—The MHS program in Occupational and Environmental Hygiene is designed for students who are developing or advancing professional careers in occupational and/or environmental health within consulting, private industry, or government sectors. Training includes traditional industrial hygiene and environmental health practice, air pollution, exposure assessment, environmental monitoring, and risk assessment. This program is appropriate for individuals pursuing broad based professional careers in occupational and environmental health as well as individuals seeking to pursue careers in occupational/industrial hygiene. The curriculum includes physiology; toxicology; occupational health; biostatistics; epidemiology; principles of industrial hygiene and safety; health and safety program manage-

ment; occupational health law; noise and physical agents in the environment; air sampling, exposure assessment and control technology.

This program, supported by a National Institute for Occupational Safety and Health (NIOSH) training grant, is accredited by the Accreditation Board for Engineering Technology (ABET) and requires one-and-a-half academic years to complete. The Occupational and Environmental Hygiene MHS Program requires a three month internship. The purpose of the internship is to provide an appropriate professional experience that is tailored for the needs of each student. During the internship the student is expected to take on independent responsibility for a project and submit a written report of the project as a master's essay in partial fulfillment of the requirements of the MHS degree.

Candidates for professional training should have a strong background in the physical, chemical, and biological sciences, including college level physics and calculus. Admission is based on academic records, Graduate Record Examination scores, references, and a résumé of professional experience.

The Occupational and Environmental Hygiene Program offers a part-time option taking advantage of courses offered on-line as well as during the Summer and Winter Institutes. The part-time program has the same requirements as the full-time option.

Research Training—PhD, ScD, and ScM Programs—Research opportunities in the division emphasize exposure assessment methods and models for recognizing, evaluating, and controlling hazards in the workplace and community environment. Assessments consider the continuum of exposure from source to effect and are comprehensive in nature, incorporating all relevant routes and pathways with a particular emphasis on air and water contamination and routes. Such assessments are integral to evaluating risk, discovering environment-disease associations, and developing methods and strategies for hazard reduction. Research training in the division employs principles and methods in chemistry, biology, physics, and mathematical modeling and includes development and evaluation of biomarkers of exposure. Research activities are supported by a number of education and research centers: Center for Water and Health; NIEHS Center in Urban Environmental Health; Education and Research Center in Occupational Health and Safety; Center for Childhood Asthma in the Urban Environment; and the Training Program in Environmental Health. Candidates for research training should have a strong background in the physical, chemical, and biological sciences, including college level physics and calculus.

Occupational and Environmental Health

The mission of the Division of Occupational and Environmental Health is to prevent disease and injury related to occupational and environmental stressors, and to promote health among individuals and in populations through research, professional practice, and teaching. The division offers formal training in occupational and environmental health, including particular strength in the area of the health effects posed by global environmental threats; a residency in occupational and environmental medicine; a joint program with the Department of Epidemiology in occupational epidemiology; and two programs in occupational health nursing. The division also provides an area of emphasis in occupational and environmental health for MPH and MHS students and fellows in medical subspecialties. The NIOSH Education and Research Center in Occupational Safety and Health serves as a major resource for the occupational health programs. The division is also designated a World Health Organization Collaborating Center in Occupational Health. Divisional faculty are involved in a wide range of research projects, which can be grouped into a number of content areas, and are commonly characterized by studies of disease etiology, prevention, or control in human populations. Research activities include a prominent focus on biomarkers and their development, validation, and demonstration of utility for prevention; development, validation, and effectiveness of medical surveillance activities; occupational and environmental health policy; evaluation of the health effects of global environmental change; interaction between genetic factors and occupational and environmental exposures in causing disease; the impact of health conditions on ability to work; and causes, risk factors, diagnosis, and treatment of occupational and environmental diseases and injuries.

Occupational and Environmental Medicine

Residency—This program is designed to train occupational and environmental medicine specialists for careers in any of the major sectors of the field—academia, industry, government, clinical practice, or labor—and provide expertise in both clinical and preventive occupational medicine. The program is fully accredited for the academic and practicum years by the Accreditation Council for Graduate Medical Education. The residency is a two-year program. The academic year involves course work leading to an MPH degree, plus certain experiences specific to the residency such as seminars, research projects, and plant visits. The second, or practicum, year consists of rotations in a variety of settings, including clinical rotations at the Center for Occupational and

Environmental Health, and rotations in government, industry, and union settings. The division has particular clinical depth in clinical toxicology, pulmonary medicine, and neuro-behavioral toxicology. An optional third year may be spent in a postdoctoral research fellowship for trainees interested in careers in academia. Admissions requirements include graduation from an approved medical school and one year of acceptable clinical internship. ECFMG certification is required for all foreign medical graduates. The most competitive candidate will already have completed residency training in another clinical specialty (e.g., internal medicine, family practice, dermatology).

Depending on the prior training of the individual applicant, specialized fellowships involving only the first or second year of the residency program are possible. Programs leading to dual board-eligibility in occupational and environmental medicine and internal medicine, pulmonary medicine, and other clinical specialties may be possible by special arrangement.

Applicants for admission are considered separately by the residency and the MPH Admissions Committee. Completed applications should be received by October 31. Personal interviews are generally required and conducted in late November and early December.

Candidates are notified of the residency's decisions on December 15. In general, all residents receive stipend support, tuition support, and health, life, and disability insurance. For further information, contact the administrator, Occupational and Environmental Medicine Residency Program, the Johns Hopkins Bloomberg School of Public Health, Room W7041, 615 N. Wolfe Street, Baltimore, MD, 21205; phone 410-955-4157, fax 410-955-1811.

Training in Occupational and Environmental Health Nursing

—This program is offered at both the master's and doctoral levels. This program offers an opportunity for nurses with appropriate academic and professional preparation to establish a strong knowledge base in the area of occupational and environmental health. For graduates of both the MPH and doctoral programs, there are employment opportunities in occupational and environmental health programs located in government agencies, the private sector, and other organizations. The year-long M. P.H. curriculum includes core courses in toxicology, industrial hygiene, injury prevention, management of occupational health services, and occupational health. Practicum and field experiences are available. Admission requirements for the master's program are based on academic performance at the bachelor's level, acceptable work experience, and satisfactory references. Doctoral candidates follow the course of study in the occupational and environmental health doctoral program.

Doctoral Program in Occupational and Environmental Health—Two doctoral degree programs are available in the Division of Occupational and Environmental Health—the PhD and DrPH programs. The objective of the PhD training program is to prepare students for careers in teaching and research in occupational and environmental health, in a variety of settings (e.g., academia, government, industry). The PhD program has an emphasis on theory and basic science and is designed for individuals who wish to achieve excellence in scholarly creative research. The program leads to competency in one of the several domains of occupational or environmental health, including epidemiology, exposure assessment, clinical or laboratory toxicology, health promotion, and disease prevention. Candidates for the PhD degree are expected to develop the ability to express research ideas verbally and in writing, and to develop skills in critical reading, discussion, and evaluation of the literature. The subject matter of this research should reflect the interest of the program faculty and serve to expand the knowledge base concerning the etiology, diagnosis and prevention of human diseases of occupational and environmental origin. Areas of importance for study include, but are not limited to, the identification of causal factors; the precise delineation of dose-effect relationships; the development of techniques for the early identification of adverse effects; contributions to the scientific basis of monitoring including biologic and health effects monitoring; the evaluation of the effectiveness of preventive measures including health promotion; and an understanding of important pathophysiologic mechanisms involved in the development of occupational and environmental disease. The DrPH degree program is a flexible and multi-disciplinary program that offers prospective students many opportunities for training and research. It is described in a separate section entitled Doctor of Public Health Program in Environmental Health. The DrPH is a professional practice degree that emphasizes a broader, more inter-disciplinary approach to research. In contrast to the PhD program, the DrPH program has an emphasis on policy and management, applied science and problem solving, and contributions to public health practice. Divisional faculty are actively involved in the program and serve as advisors to DrPH students. Application procedures are described in the Academic Information chapter. In addition, the department requires recent results of the Aptitude Test of the Graduate Record Examination from all applicants. A departmental manual and specific handouts for each program are all available on request, providing more detailed information on program requirements, research projects, and courses.

Training in Molecular Epidemiology is available through an educational program developed jointly with the Department of Epidemiology to offer doctoral-level training to qualified candidates. The program includes study of the basic concepts of epidemiology, biostatistics, and clinical toxicology, as well as experience with molecular biomarkers, dose-response relationships, the identification of etiological agents, surveillance and medical monitoring, and participation in ongoing research projects.

Program on the Health Effects of Global Environmental Change

The Program on Health Effects of Global Environmental Change is dedicated to the scientific discovery and application of new knowledge pertaining to the human health risks posed by global environmental degradation. Such problems include global climate change, ecosystem decay, depletion of marine fisheries, deforestation, stratospheric ozone depletion, and biodiversity loss. Drawing upon the strengths of a number of public health and environmental disciplines, the program strives to further the understanding of complex and dynamic environmental systems as they affect human health. Through substantive interdisciplinary efforts, the program seeks to gain valuable insights into many of the new global environmental health issues confronting the world today and communicating these research findings to public health professionals in training, decision makers, and the general public. Students in the MPH, MHS, and DrPH programs are especially encouraged to participate in the activities of the Program on the Health Effects of Global Environmental Change.

Environmental Health Sciences

Faculty data as of April 1, 2004. For current listing, please click here: <http://faculty.jhsph.edu/ehs.cfm>

John D. Groopman, Ph.D.

Chair of the Department.

Primary Faculty

Jacqueline Agnew, M.P.H., Ph.D.

Professor of Occupational and Environmental Health. *Environmental Health Sciences, aging workers, occupational health, environmental health, occupational stress, musculoskeletal disorders.*

Kwamena Baidoo, Ph.D.

Associate Professor of Radiation Health Sciences. *Cancer, growth factor peptides, biomarkers, receptors, molecular imaging, Fluorescence imaging, near-IR tracers, technetium-99m.*

Shyam S. Biswal, Ph.D., M.S.

Assistant Professor of Toxicological Sciences. *Environmental Health Sciences, acrolein, cigarette smoke, lung cancer, genomics, proteomics.*

Joseph Bressler, Ph.D.

Associate Professor of Toxicological Sciences. *Environmental Health Sciences, blood brain barrier, lead, iron, transporters, insecticide.*

Patrick N. Breyse, Ph.D., M.H.S.

Professor of Environmental Health Engineering. *Environmental Health Sciences, industrial hygiene, exposure assessment, magnetic fields, asbestos, fiberglass, environmental epidemiology.*

Timothy J. Buckley, Ph.D., M.H.S.

Associate Professor of Environmental Health Engineering. *Environmental Health Sciences, Biomarkers, Exposure Assessment, Total Exposure, Community-based Participatory Research Body-Burden, Aggregate Exposure, Risk Assessment Pesticides, Metals, Volatile Organic Compound (VOCs), Polycyclic Aromatic Hydrocarbons (PAH), Dietary exposure, Inhalation, Ingestion, Dermal Exposure, Alveolar Breath, Blood, Urine, Blood / Breath Partition Coefficient, Exposure Misclassification, Asthma, Cancer, Community.*

Maureen Cadorette, R.N., M.P.H.

Research Associate of Occupational and Environmental Health.

Srinivasan Chandrasegaran, Ph.D., M.S.

Professor of Physiology. *Environmental Health Sciences, restriction enzymes, chimeric nucleases, targeted recombination.*

Jin-qiang Chen, Ph.D.

Research Associate in Toxicological Sciences.

Valeria Culotta, Ph.D.

Professor of Toxicological Sciences. *Environmental Health Sciences, copper, metallochaperones, CCS, ATX1, superoxide, SOD, manganese, yeast, ALS.*

Arthur M. Dannenberg Jr., M.D., Ph.D.

Professor of Environmental Health Sciences. *Tuberculosis; BCG; sulfur mustard; cytokines, adhesion molecules; allergic dermatitis; macrophages and lymphocytes; cell mediated immunity (CMI); delayed-type hypersensitivity DTH.*

B. Rey de Castro, Sc.D.

Research Associate.

Jane Howard Dees, Ph.D.

Research Associate of Physiology.

Pamela W. Derrick, M.A.

Research Associate. Director of Educational Programs. *Environmental Health Sciences.*

Patrick M. Dolan, B.A.

Research Associate of Toxicological Sciences.

Mary L. Doyle, M.P.H., R.N.

Research Associate of Occupational and Environmental Health.

Patricia A.G. Egner, M.A.S.

Assistant Scientist of Toxicological Sciences.

Walter Ehrlich, M.D.

Associate Professor Emeritus of Physiology. *Regulations of the cardiovascular system; autoregulations.*

Brian A. Fitzek, B.A.

Research Associate. E.H.S. Communications Coordinator.

Robert S. Fitzgerald, Ph.D.

Professor of Physiology. *Environmental Health Sciences, carotid body, chemotransduction, cardiopulmonary control, acetylcholine, catecholamines, gene-based differences.*

Sheila T. Fitzgerald, Ph.D.

Associate Professor of Occupational and Environmental Health. *Environmental Health Sciences, Adolescents, young workers, occupational stress, cardiovascular disease, return to work.*

Tekum Fonong, Ph.D.

Assistant Scientist of Toxicological Sciences. *Environmental Health Sciences, Oxidative stress, Free radical metabolism, oxidative DNA damage, DNA repair, antioxidant defense and cancer.*

Robert Frank, M.D.

Professor Emeritus of Physiology. *Physiology.*

Alison S. Geyh, Ph.D.

Assistant Professor of Environmental Health Engineering. *Environmental Health Sciences, airborne contaminants, health effects, source identification, chemical composition, metal content, particulate matter, ozone.*

Alan M. Goldberg, Ph.D.

Professor of Toxicological Sciences; Director, Center for Alternatives to Animal Testing. *Environmental Health Sciences, toxicology, humane science, in vitro.*

Lynn R. Goldman, M.D., M.P.H.

Professor of Occupational and Environmental Health. *Environmental Health Sciences, environmental health policy, pediatric environmental health, children, infants, lead, methylmercury, pesticides, chemicals, environmental epidemiology.*

John D. Groopman, Ph.D.

Anna M. Baetjer Professor of Environmental Health Sciences. *Environmental Health Sciences, Chemical carcinogenesis; environmental carcinogenesis; chemoprevention; cancer prevention and control.*

Tomás R. Guilarte, Ph.D.

Professor of Radiation Health Sciences and Toxicological Sciences. *Environmental Health Sciences; Neurotoxicology; lead neurotoxicity/NMDA receptor/learning and memory; manganese neurotoxicity; biomarkers of brain injury/Parkinson's disease; brain imaging/positron emission tomography/magnetic resonance imaging and spectroscopy.*

Rolf U. Halden, Ph.D.

Assistant Professor of Environmental Health Engineering. *Drinking water, wastewater, groundwater, water quality, water treatment, bioremediation, biodegradation, biotransformation, bioaccumulation, biosolids, exposure assessment, biomarker, proteomics, mass spectrometry, LC/MS, LC/MS/MS, GC/MS, MALDI-TOF MS, pharmaceuticals, personal care products, pollutants, dioxin, environmental health, microbial ecology.*

John Howell, B.S.

Instructor of Physiology.

George J. Jakab, Ph.D.

Professor of Occupational and Environmental Health. *Cellular biology of the lung with emphasis on the phagocytic and regulatory role of the alveolar macrophages and the immune mechanisms of the lung parenchyma.*

Laran T. Jensen, Ph.D.

Research Associate in Toxicological Sciences.

Norma Kanarek, Ph.D., M.P.H.

Associate Public Professor of Environmental Health Sciences. *Environmental Health Sciences, public health practice, public health performance, surveillance, tracking, community health, community health assessment, applied epidemiology.*

Thomas W. Kensler, Ph.D.

Professor and Director of Toxicological Sciences. *Environmental Health Sciences, Chemical carcinogenesis, chemoprevention, hepatocarcinogenesis, reactive oxygen, antioxidants, enzyme induction, aflatoxin, oltipraz, chlorophyllin.*

Samar Khoury, M.S.

Research Associate in Occupational and Environmental Health.

Shuang-yuan Kuang, B.S.

Research Associate.

Mi-Kyoung Kwak, Ph.D., M.S.

Research Associate of Toxicological Sciences.

Peter S. J. Lees, Ph.D.

Professor of Environmental Health Engineering. *Industrial Hygiene Environmental Health Sciences, Surface Contamination Exposure Assessment Man-Made Vitreous Fibers Retrospective Exposure Assessment Lead Paint Dermal Exposure Chromium.*

Jonathan M. Links, Ph.D.

Professor of Radiation Health Sciences. *Environmental Health Sciences, imaging, dosimetry, radiation, Dirty Bombs, nuclear medicine, radiological terror.*

Clifford Mitchell, M.D., M.P.H.

Associate Public Health Professor of Occupational and Environmental Health and Director, Occupational Medicine Residency. *Environmental Health Sciences, Occupational health, outcomes research, evaluation research, work-related musculoskeletal disorders, indoor air.*

Wayne Mitzner, Ph.D.

Professor and Director of Physiology. *Environmental Health Sciences, asthma, lung, airways, air pollution, PM, angiogenesis, pathology.*

Cindy Parker, M.D.

Research Associate

Jonathan A. Patz, M.D., M.P.H.

Assistant Professor of Occupational and Environmental Health. *Environmental Health Sciences, Air Pollution, Deforestation, Dengue Fever, Ecosystem, El Niño, Geographic Information Systems (GIS), Global Climate Change, Greenhouse Warming, Heat Mortality, Integrated Assessment, Land use, Malaria, Modeling, Remote sensing, Vector-borne diseases, Water-borne Diseases.*

Lance B. Price, M.Sc.

Research Associate of Environmental Sciences.

Donald F. Proctor, M.D.

Professor Emeritus of Physiology. *Physiology.*

Richard T. Rabold, B.A.

Research Associate in Physiology.

Sekhar P. M. Reddy, Ph.D.

Associate Professor of Physiology. *Environmental pollutants, lung injury and repair, bronchial carcinogenesis, cigarette smoke, oxidants and antioxidants, hyperoxia, gene regulation, transcription factors, AP-1, Nrf2, signal transduction.*

Carol E. Resnick, B.A.

Research Associate of Environmental Health Engineering.

Robert J. Rubin, Ph.D.

Professor Emeritus of Environmental Health Sciences.

Brian Schofield, J.D.

Research Associate of Physiology.

Peter Scholl, Ph.D.

Senior Research Associate.

Kellogg J. Schwab, Ph.D.

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

Brian Schwartz, M.D., M.S.

Professor and Director of Occupational and Environmental Health. *Environmental Health Sciences, biologic markers, cognitive functioning, gene-environment interaction, genetic susceptibility, headache, lead intoxication, Lyme disease, molecular epidemiology, neurobehavioral testing, occupational epidemiology, occupational safety and health, olfactory dysfunction, retrospective assessment of exposure, solvents, tetra ethyl lead, vector-borne disease.*

Machiko Shirahata, M.D., D.M.Sc.

Associate Research Professor. *Environmental Health Sciences, acetylcholine, carotid body, hypoxia, oxygen, nicotinic receptor, patch clamp, sleep apnea.*

Ellen Silbergeld, Ph.D.

Professor of Environmental Health Engineering. *Environmental Health Sciences, antibiotic-resistant bacteria, lead, mercury, immunotoxicology, neurotoxicology, environment.*

Ernst Wm. Spannake, Ph.D.

Professor of Physiology. *Environmental Health Sciences, respiratory system, airways, epithelium, inflammation, mucosal immunity, mediators, gene expression, oxidant pollutants, ozone, respiratory viruses, rhinovirus, asthma, air pollution.*

Paul T. Strickland, Ph.D.

Professor of Occupational and Environmental Health. *Environmental Health Sciences, molecular bio-monitoring of genotoxic agents and genetic polymorphisms associated with their metabolism, carcinogen metabolites and genetic damage in human populations.*

Clarke G. Tankersley, Ph.D.

Assistant Professor of Physiology. *Environmental Health Sciences, Environmental Stress Physiology Mouse Genetics Pulmonary Physiology Linkage Analysis Control of Ventilation Genetic Susceptibility Air Pollutant Toxicology Genetic Obesity.*

Michael A. Trush, Ph.D.

Professor of Toxicological Sciences. *Environmental Health Sciences, environmental chemicals, reactive oxygen, mitochondria, benzene, benzo(a)pyrene, leukocytes, polymorphonuclear leukocytes, mononuclear cells, bone marrow progenitors, aplastic anemia, agranulocytosis, leukemia.*

Henry N. Wagner Jr., M.D.

Professor and Director of Radiation Health Sciences; Director, Center for the Advancement of Radiation Education and Research. *Environmental Health Sciences, Nuclear Medicine.*

Pamela (Polly) Walker, M.D.

Research Associate of Occupational and Environmental Health. *Environmental Health Sciences, sustainability, greening the campus.*

Walter Watson, Ph.D.

Assistant Professor. *Environmental Health Sciences, redox, thioredoxin, toxicology, oxidative stress, nucleocytoplasmic transport.*

Virginia Weaver, M.D., M.P.H.

Assistant Professor of Occupational and Environmental Health. *molecular epidemiology, medical surveillance, occupational and environmental chemical exposures, biomarkers, t,t-muconic acid, benzene biomonitoring, lead nephrotoxicity, retinol-binding protein, N-acetyl- β -D-glucosaminidase (NAG), cadmium nephrotoxicity occupational health.*

M. Gordon Wolman, Ph.D.

Professor of Geography and Environmental Engineering and Director of the Division of Environmental Health Engineering. *Environmental Health Engineering, Geology, geomorphology, alluvial river channel processes, hydrology, Quaternary geology, physical geography, environmental change.*

James D. Yager, Ph.D.

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

Joint Appointments

Martin D. Abeloff, M.D.

Professor of Oncology, School of Medicine.

Susan P. Baker, M.P.H.

Professor of Health Policy and Management. *Injury, teen drivers, alcohol, aviation safety, injury severity, occupational safety.*

Timothy D. Baker, M.D., M.P.H.

Professor in International Health. *International Health, Health planning, health sector workforce, disease burden to society, injury control, rehabilitation, India, Brazil, Indonesia, and Taiwan, Armenia, Ukraine, Thailand, Sri Lanka, Burma (Myanmar), Peru, Kuwait, Saudi Arabia, China, Pakistan, El Salvador, Nigeria, Ethiopia.*

Edward J. Bernacki, M.D., M.P.H.

Associate Professor of Medicine, School of Medicine.

Karen Bolla, Ph.D.

Associate Professor of Neurology, School of Medicine.

Robert Brown, M.D., M.P.H.

Professor of Anesthesiology and Critical Care Medicine, School of Medicine. *Environmental Health Sciences, structure-function relationship of pulmonary airways and vessels, and how they relate to reactive airway disease.*

Thomas Burke, Ph.D., M.P.H.

Professor of Health Policy and Management. *Environmental health policy; risk assessment and communication; environmental epidemiology; health policy and management.*

Robert A. Casero Jr., Ph.D.

Professor of Oncology, School of Medicine. *Polyamines, polyamine oxidase, SSAT, PAO, PAOh1, SMO, apoptosis.*

David Celentano, M.H.S., Sc.D.

Professor of Epidemiology. *Epidemiology, international health, HIV, AIDS, STDs, behavior, Asia, AIDS prevention.*

Barbara Curbow, Ph.D.

Associate Professor of Health Policy and Management. *Health Policy and Management, psychosocial oncology, quality-of-life, decision making, breast cancer, psychological stress, occupational stress, child care, child care workers, risk communication, health behavior, attitudes and behavior, attitude change.*

Robert Dannals, Ph.D.

Professor of Radiology and Radiological Sciences, School of Medicine.

Cecilia T. Davoli, M.D.

Assistant Professor of Pediatrics, School of Medicine.

Sinha Debasish, Ph.D.

Assistant Professor in the Wilmer Eye Institute at the School of Medicine.

Theodore L. DeWeese, M.D.

Professor of Oncology and Urology, School of Medicine.

Anne Mae Diehl, M.D.

Professor of Medicine, School of Medicine.

Larry Edward Dillehay, Ph.D., M.S.

Research Associate of Oncology, School of Medicine.

Peyton A. Eggleston, M.D.

Professor of Pediatrics, School of Medicine.

Hugh Ellis, Ph.D.

Professor of Geography and Environmental Engineering, School of Engineering.

Mark R. Farfel, Sc.D.

Associate Professor of Health Policy and Management. *Community health, urban health, community-based research, lead poisoning, prevention, children.*

Edward W. Gabrielson, M.D.

Associate Professor of Pathology and Oncology in the School of Medicine.

Kathleen L. Gabrielson, Ph.D., D.V.M.

Assistant Professor in the Department of Comparative Medicine of the School of Medicine.

Joe G.N. Garcia, M.D.

Professor of Pulmonary Medicine in the School of Medicine. *Environmental Health Sciences, Endothelial Cell Signal Transduction; Cytoskeletal Regulation; Role of Non-Muscle Contraction in Vascular Barrier Regulation; Angiogenesis, Inflammation and Programmed Cell Death.*

Steve N. Georas, M.D.

Associate Professor in the Department of Pulmonary and Critical Care Medicine in the School of Medicine.

Gary W. Goldstein, M.D.

Professor of Neurology, School of Medicine; President, Kennedy-Krieger Institute.

Thaddeus K. Graczyk, Ph.D., M.S.C.

Associate Research Professor in Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, enteric, diseases, water-borne parasites, cryptosporidium, parasite transmission, giardia, medical parasitology, avian malaria, human-infectious microsporidia.*

Lawrence Grossman, Ph.D.

Professor of Biochemistry. *Biochemistry and Molecular Biology, Nucleotide excision repair (NER) pathway, UvrA, UvrB and UvrC proteins.*

Maureen Horton, M.D.

Senior Associate. *Physiology.*

Raymond C. Koehler, Ph.D.

Professor of Anesthesiology and Critical Care Medicine, School of Medicine. *Mechanisms of oxygen transport regulation, Cerebrovascular physiology Cardiac arrest and resuscitation Stroke Hepatic encephalopathy.*

Robert S. Lawrence, M.D.

Professor of Health Policy and Management and the Edyth H. Schoenrich Professor of Preventive Medicine and Associate Dean for Professional Education and Programs. *Health and Human Rights, Environmental impacts of industrial agriculture, Food Security.*

Joseph B. Margolick, M.D., Ph.D.

Professor of Molecular Microbiology and Immunology. *Human immunodeficiency virus, immune assessment, immune deficiency, T-cells, flow cytometry, cell sorting, pathogenesis of HIV.*

Alvaro Muñoz, Ph.D.

Professor of Epidemiology. *Statistics in Epidemiology, Cohort Studies, Infectious Diseases, Biomarkers, Kidney Disease, Post marketing surveillance, Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS), Survival Analysis, Analysis of Longitudinal Data.*

Allen C. Myers, Ph.D.

Associate Professor.

Viswanathan Natarajan, Ph.D.

Professor of Pulmonary and Critical Care Medicine in the School of Medicine.

William G. Nelson V, M.D., Ph.D.

Professor of Oncology, School of Medicine.

Solbert Permutt, M.D.

Professor of Medicine, School of Medicine. *Pathophysiology of asthma and airways hyperreactivity, Mechanical interactions of respiration and circulation, detection and prevention of COPD in high risk populations.*

Gary H. Posner, Ph.D.

Professor of Chemistry, School of Arts and Sciences.

Magdalena Reissig, M.D.

Associate Professor Emerita in the Department of Molecular Microbiology and Immunology.

Noel R. Rose, M.D., Ph.D.

Professor of Molecular Microbiology and Immunology.

John A. Schaefer, CIH, M.F.S.

Assistant Professor in the Division of Occupational Medicine in the School of Medicine.

James S.K. Sham, Ph.D., M.Phil.

Associate Professor of Pulmonary and Critical Care, School of Medicine. *Pulmonary and Critical Care Medicine.*

Jimmie T. Sylvester, M.D.

Professor of Medicine, School of Medicine. *Hypoxic Pulmonary Vasoconstriction, Ischemia-Reperfusion Injury in Isolated Lungs.*

Peter B. Terry, M.D.

Professor of Medicine, School of Medicine. *Medical ethics.*

Nga Lien Tran, Dr.P.H., M.P.H., M.B.A., C.I.H.

Adjunct Assistant Professor in the Department of Health Policy and Management.

Bradley J. Udem, Ph.D.

Professor of Medicine, School of Medicine. *Peripheral nervous system is directly involved in the processes of inflammation. This hypothesis is being studied primarily in the central airways and sympathetic ganglia. We are addressing this in a multidisciplinary fashion using pharmacological, electrophysiological, biochemical, and anatomical methodologies.*

Alexander D. Verin, Ph.D.

Associate Professor in the Pulmonary Division of the School of Medicine.

Elizabeth Wagner, Ph.D.

Professor of Medicine, School of Medicine. *Environmental Health Sciences, Angiogenesis, Bronchial circulation, Endothelial cell biology, Leukocyte recruitment, Particle clearance.*

Robert Wise, M.D.

Professor of Medicine, School of Medicine. *Clinical trials in chronic obstructive lung diseases.*

Dean F. Wong, M.D., Ph.D.

Professor of Radiology and Radiologic Sciences, School of Medicine.

Departmental Affiliates

Amy S. Alfriend, R.N., M.P.H.

Associate in Occupational and Environmental Health.

Dennis Averill, M.H.S.

Associate in Environmental Health Engineering.

John M. Balbus, M.D., M.P.H.

Adjunct Associate Professor.

Jane F. Barlow, M.D., M.P.H., M.B.A.

Associate in Occupational and Environmental Health.

William S. Beckett, M.D., M.P.H.

Associate in Physiology.

Kristen E. Belmonte, Ph.D.

Adjunct Assistant Professor of Physiology.

Stephen Bowes III, Ph.D.

Adjunct Assistant Professor of Environmental Health Engineering.

Marianne Cloeren, M.D., M.P.H.

Associate in Occupational and Environmental Health.

Ethel Cohran, R.N., B.S.N., M.S.N.

Associate in Occupational and Environmental Health.

Rita Colwell, Ph.D., Sc.D.

Adjunct Professor.

Anthony Conley, M.S.

Associate in Environmental Health Engineering.

Richard W.K. Costello, M.B., M.R.C.P.I.

Adjunct Assistant Professor in Physiology.

Joanna Dankiewicz-Sznajder, Ph.D.

Senior Associate in Environmental Health Engineering.

Craig Ewart, Ph.D., M.A.

Senior Associate.

Dana A. Focks, Ph.D.

Senior Associate in Occupational and Environmental Health.

Allison Fryer, Ph.D.

Adjunct Professor. *Environmental Health Sciences, Muscarinic receptors, eosinophils, airway hyperreactivity, parasympathetic nerves, asthma.*

Janet Fujikawa, D.O., M.S.

Associate in Occupational and Environmental Health.

Steven Fuller, Ph.D., D.O.

Associate in Physiology.

Daniel Gagnon, Ph.D., M.A.Sc.

Associate in Radiation Health Sciences.

Susan Guarnieri, M.D., M.P.H.

Senior Associate in Occupational and Environmental Health.

Jill A. Guidera, B.S.N.

Associate in Occupational and Environmental Health.

Elise M. Handelman, B.S.N., B.S.

Associate in Occupational and Environmental Health.

Linda Hanna, Ph.D.

Adjunct Assistant Professor of Environmental Health Engineering.

Anita M. Holloway, M.D.

Senior Associate in Occupational and Environmental Health.

Frances E. Humphrey, M.S.N.

Associate in Occupational and Environmental Health.

Joseph G. Jacangelo, Ph.D.

Adjunct Associate Professor in Environmental Health Engineering. *Environmental Health Sciences, membranes, ozone, disinfection by-products, filtration, disinfection, Giardia, Cryptosporidium.*

Jana Kesavan, Ph.D., M.H.S.

Associate in Environmental Health Engineering.

Emory E. Knowles, M.S., CSP, CIH

Associate in Environmental Health Engineering.

Jonathan R. Krasnoff, J.D.

Associate in Environmental Health Engineering.

Byung-Kook Lee, M.D., M.M.S., M.S.

Senior Associate in Occupational and Environmental Health.

Pamela J. Lein, Ph.D.

Adjunct Assistant Professor of Toxicological Sciences. *Environmental Health Sciences, neuronal morphogenesis, dendrites, developmental neurotoxicity, polychlorinated biphenyls (PCBs), organophosphate pesticides, bone morphogenetic proteins (BMPs), endocrine disrupters, neuronal cell culture, sympathetic neurons, hippocampal neurons, in vitro models, dendritic growth, asthma.*

Philip G. Lewis, M.D., M.P.H.

Associate in Occupational and Environmental Health.

Paul A. Locke, Dr.P.H., M.P.H., J.D.

Senior Associate in Environmental Health Sciences. *Environmental law, environmental policy, risk assessment, radiation, alternatives to animal testing.*

Mary S. Lopez, Ph.D., M.S.

Associate in Environmental Health Engineering.

Melissa McDiarmid, M.D., M.P.H.

Adjunct Associate Professor of Occupational and Environmental Health.

Rene Mendes, M.D.

Senior Associate in Occupational and Environmental Health.

Rebecca F. Moreland, Ph.D., M.P.H.

Associate in Occupational and Environmental Health.

James A. Palmier, M.D., M.P.H.

Associate in Occupational and Environmental Health.

John B. Parkerson Jr., M.D., M.S.

Associate in Occupational and Environmental Health.

Geng-sun Qian, Ph.D.

Senior Associate in Environmental Health Sciences.

Terence Risby, Ph.D.

Adjunct Professor of Toxicological Sciences. *Environmental Health Sciences, tissue injury and disease; liver and kidney cellular injury; oxidative stress in humans, obesity, breath biomarkers of disease, breath biomarkers of tissue injury, breath biomarkers of exposure, molecular basis of lung injury, airborne particulate matter, phagocytosis.*

Patricia R. Robuck, Ph.D., M.P.H.

Associate in Occupational and Environmental Health.

Nathaniel Rothman, M.D., M.P.H.

Adjunct Professor of Occupational and Environmental Health.

Andrew N. Rowan, Ph.D.

Senior Associate in Toxicological Sciences.

Anita L. Schill, Ph.D., M.P.H.

Associate in Occupational and Environmental Health.

Ronald C. Scripsick, Ph.D., M.P.H.

Associate in Environmental Health Engineering.

David H. Sliney, M.S.

Associate in Environmental Health Engineering.

Michael C. Snead, Sc.M., C.I.H., C.S.P.

Associate in Environmental Health Engineering.

Thomas R. Sutter, Ph.D.

Adjunct Associate Professor of Toxicological Sciences.

Jocelyn Swanson-Appolon, M.D., M.P.H.

Associate in Occupational and Environmental Health.

Ronald W. Taylor, J.D.

Associate in Environmental Health Engineering.

Andrew Todd, Ph.D.

Adjunct Assistant Professor of Occupational and Environmental Health.

Lance A. Wallace, Ph.D.

Senior Associate in Environmental Health Engineering.

Alice Koegel Weber, M.H.S.

Associate in Environmental Health Engineering.

Marsha Wills-Karp, Ph.D.

Adjunct Associate Professor in Physiology.

Environmental Health Sciences

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

180.601 ENVIRONMENTAL HEALTH. (5 units). Summer term. Also offered via the Internet, third term.

Examines health issues, scientific understanding of causes, and possible future approaches to control of the major environmental health problems in industrialized and developing countries. Topics include how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; biomarkers and risk analysis; the scientific basis for policy decisions; and emerging global environmental health problems.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: Introduction to Online Learning; college courses in general biology, algebra, and physics or chemistry.

180.603 MOLECULAR TECHNIQUES FOR ENVIRONMENTAL HEALTH SCIENCES.

(3 units). Fourth term. Chandrasegaran, S.

Theory and laboratory experience present molecular techniques in recombinant DNA, analytical chemistry, and antibody techniques used in environmental health science research.

Student evaluation: Student evaluation based on performance in the laboratory.

180.611 THE GLOBAL ENVIRONMENT AND PUBLIC HEALTH. (4 units). Fourth term. Patz, Jonathan.

Explores the health impact of global environment degradation from development and industrialization. Topics include: stratospheric ozone depletion, global climate change, desertification, deforestation, environmental refugees, collapse of marine fisheries, declining agricultural production, and biodiversity loss. Provides an overview of scientific and policy issues surrounding global and environmental health issues as well as methods to study global environmental health.

Student evaluation: Student evaluation based on a project and/or paper.

180.629 ENVIRONMENTAL AND OCCUPATIONAL HEALTH LAW AND POLICY. (4 units). Third term. Goldman, Lynn; Locke, Paul; Silbergeld, Ellen.

Examines the constitutional, legal, and ideological foundations of programs, processes and policies aimed at protecting human health and the environment in the United States. Primarily focuses on environmental and occupational health laws, including those concerning air and water pollution, pesticide and toxic chemical manufacture and use, worker protection, disposal of solid and hazardous wastes, citizen suits, and worker and community right-to-know. Also addresses laws and policies concerning environmental justice, property rights, workers compensation, land use issues, state/federal responsibility, and administrative processes.

Student evaluation: Student evaluation based on mid-term mediation exercise, final written assignment and presentation.

180.631 ENVIRONMENTAL AND OCCUPATIONAL HEALTH POLICY SEMINAR.

(3 units). Fourth term. Goldman, Lynn; Locke, Paul; Silbergeld, Ellen. Jointly offered with the Department of Health Policy and Management. Former course number 301.630.

Uses a case-study approach to discuss the political, economic and scientific contexts of environmental and occupational health policy making. Covers the regulation of chemical and pesticide production and use, waste management, occupational health and safety, food safety, and international aspects of policy making. Emphasizes the critical analysis of specific case studies, involving specific decisions and current controversy, including the roles of risk assessment, cost benefit analysis, and the precautionary principle. Also covers the interactions of environmental and occupational health policy with international affairs, specifically trade and development.

Student evaluation: Students are expected to actively participate in class discussion, and the course requires a written paper.

Prerequisites: 180.629 or consent of the instructor.

Consent of instructor required.

180.640 MOLECULAR EPIDEMIOLOGY AND BIOMARKERS IN PUBLIC HEALTH.

(4 units). Third term. Strickland, Paul. Jointly offered with the Department of Epidemiology.

Emphasizes the scientific basis of molecular epidemiology and provides examples of the application of molecular biology, analytical chemistry, and toxicology to the study of chronic disease etiology and its public health application, including examples in human cancer, cardiovascular, immunological, and neurological diseases. Also discusses methodological and study design problems.

Student evaluation: Student evaluation based on a paper (50%) and a final exam (50%).

Prerequisites: 340.601-602 or consent of instructor.

180.650* FUNDAMENTALS OF CLINICAL ONCOLOGY FOR PUBLIC HEALTH PRACTITIONERS.

(3 units). Second term. Kanarek, Norma. Not offered 2005-2006.

Lectures by current practitioners of cancer prevention control in clinical oncology cover the diagnosis, treatment, and prevention/screening measures used for cancers such as lung, breast, prostate, colon/rectal, etc.

Student evaluation: Student evaluation based on two exams.

Prerequisites: Basic epidemiology and toxicology useful, but not required.

Consent of instructor required.

180.660 INTRODUCTORY PRINCIPLES OF ENVIRONMENTAL HEALTH.

(3 units).

Third term. Jakab, George.

Provides an introduction to the concepts and principles of environmental health -- the effects of the environment on human health. Presents the major concepts and principles of environmental health, and their relation to the practice of public health. Course utilizes selected environmental agents and vectors as exemplars of these concepts and principles. Intended for MHS students (this course does not meet the Environmental Health requirement for the MPH program).

Student evaluation: Student evaluation based on mid-term and a final exam.

182.614 INDUSTRIAL HYGIENE

LABORATORY. (5 units). Third term. Buckley, Timothy.

Uses laboratory and field methods and equipment to appraise occupational and environmental atmospheric conditions. Topics include grab and dynamic sampling; measurement of respirable and non-respirable particulates; particulates size analysis; fiber sampling and analysis; gas and vapor sampling and analysis by wet chemical and instrumental methods; and calibration of direct reading field survey instruments.

Student evaluation: Student evaluation based on written lab reports and a field project.

Prerequisites: College chemistry and physics.

* Not offered every year as indicated.

182.615 AIRBORNE PARTICLES. (3 units).

Third term. Kesavan, Jana.

Presents physiochemical features of aerosol disperse systems, including the generation of aerosols; the dynamics of aerosol size distribution (atmospheric and artificial); evaporation, condensation, and coagulation of aerosols; electrostatic behavior of aerosols; particle motion in flows and fields; optics of aerosols; and the application of these principles to sampling, sizing, and collection.

Prerequisites: College physics or consent of instructor.

182.621 INTRODUCTION TO ERGONOMICS. (4 units). Second term. Lopez, Mary.

Introduces the fundamental principles of ergonomics, including terminology, concepts, and applications of physiology, anthropometry, biomechanics, psychology, and engineering to work place and work methods design. Emphasizes the complex relationships among workers, job demands, work place designs, and work methods. Prepares students for advanced study in safety science, industrial hygiene, injury prevention, industrial engineering, and safety and health management.

Student evaluation: Student evaluation based on assignments, and mid-term and final exams.

Consent of instructor required.

182.622 VENTILATION CONTROLS. (4 units). Fourth term. Breyse, Patrick.

Presents principles of air flow as applied to design and evaluation of industrial ventilation systems. Laboratory sessions illustrate fundamental aspects of system components.

Prerequisites: College chemistry and physics w/labs, math through differential and integral calculus.

182.623 OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT. (3 units). Third term. Mitchell, Clifford.

Examines elements needed to design and implement an effective safety and health program in industry. Stresses managerial techniques, including financial planning, communications, organizational structure, planning, auditing, and the use of records.

182.625 PRINCIPLES OF INDUSTRIAL HYGIENE. (4 units). Second term. Lees, Peter. Also offered via the Internet, fourth term.

Introduces concepts, terminology, and methodology in the practice of industrial hygiene, and identifies resource materials. Includes lectures, typical problems, demonstrations, and a walk-through survey.

Student evaluation: Midterm and final exam.

Prerequisites: Introduction to Online Learning.

182.626 TROPICAL ENVIRONMENTAL HEALTH. (2 units). Third term. Schiff, Clive.

Introduces major environmental health problems in the tropical areas of the world and discusses some solutions in detail. Covers simple water supplies, sanitary latrines, land treatment of wastewater re-use, stabilization ponds, relationship of water supply and sanitation to diarrheal diseases, composting and bio-gas, tropical housing, disaster sanitation, and techniques for disinfection. Demonstrates field treatment of water supplies and water microbiology. Each student designs a field project for an environmental control measure to reduce disease in a community.

182.631 PRINCIPLES OF OCCUPATIONAL SAFETY. (2 units). First term. Knowles, Emory.

Introduces the organizational framework in which safety sciences are practiced in the U.S. Illustrates professional and scientific methodologies by focusing on selected, substantive areas of practice (systems safety, nature of accidents, electrical hazards, fire and fire suppression, explosions and explosives, and falls and walking and working surfaces).

Student evaluation: Student evaluation based on a paper or exam.

Consent of instructor required.

182.637 NOISE AND OTHER PHYSICAL AGENTS IN THE ENVIRONMENT. (4

units). Second term. Breyse, Patrick.

Discusses noise-related topics, such as physics of noise propagation and control, noise measurement, hearing physiology, and noise-induced hearing loss, and covers non-ionizing radiation lasers, heat and cold stress, and vibration.

Student evaluation: Student evaluation based on exams and homework.

Prerequisites: College chemistry and physics, or consent of instructor.

182.638* FUNDAMENTALS OF WATER QUALITY ENGINEERING FOR PUBLIC HEALTH. (3 units). Fourth term. Halden, Rolf U. Not offered 2005-2006.

Introduces fundamental principles of water and wastewater treatment in the context of public health. Topics include water quality parameters and their determination, drinking water supply and treatment, wastewater treatment, composition and disposal of biosolids, as well as behavior and fate of chemicals and microorganisms in drinking water and wastewater. Instruction materials include books, scientific papers, practical demonstrations, and case studies.

Student evaluation: Written final exam, and/or term paper.

Prerequisites: 182.640.

182.640* FOOD- AND WATER- BORNE DISEASES. (3 units). Third term. Schwab, Kellogg. Next offered 2005-2006.

Discusses food- and water-borne intoxicants and infections, diseases linked to eating and drinking, and prevention of food and water-borne diseases. Topics include transmission of disease via food and water, disease processes in food- and water-related illness, microbial toxins, mycotoxins, chemical toxins, bacterial infections (salmonellosis, shigellosis, vibrio, listeria, etc.) virus and parasitic infections, organizing safe food and water supplies, and issues in food and water safety.

Student evaluation: Student evaluation based on mid-term and final exams.

Consent of instructor required.

183.631 FUNDAMENTALS OF HUMAN PHYSIOLOGY. (4 units). Second term.

Tankersley, Clarke.

Introduces the central and peripheral nervous systems and neuromuscular, respiratory, circulatory, endocrine, gastrointestinal, reproductive, and renal systems. Intended for students in the allied health fields whose careers will be involved with human health problems.

183.635 MATHEMATICAL APPROACHES TO PHYSIOLOGICAL PROBLEMS. (3 units).

Third term. Mitzner, Wayne.

Presents the fundamentals of the mathematical methodology frequently applied to the solution or analysis of biologic and physiologic systems, and applies these techniques to model several specific biologic processes and systems.

Prerequisites: Differential and integral calculus, background in basic calc & physiology recommended.

183.638 MECHANISMS OF CARDIOPULMONARY CONTROL. (2 units).

First term. Fitzgerald, Robert.

Focuses on reflex control of the respiratory and cardiovascular systems. Discusses the various receptors, central integration, and effect or mechanisms of the two systems, and examines their roles under resting and stressful conditions, e.g., factors involved in respiratory rhythmicity at rest, cardiopulmonary acclimatization to altitude, and adaptation to exercise. Blends didactic material with student-led discussion of pertinent journal articles and monographic literature.

Student evaluation: A paper is required.

* Not offered every year as indicated.

183.641* THE HEALTH EFFECTS OF INDOOR AND OUTDOOR AIR

POLLUTION. (3 units). Fourth term. Spannhake, Ernst. Not offered 2005-2006.

Provides background on respiratory tract defense mechanism and the factors that control inhalation exposures to environmental pollutants and their influences on health and diseases. Topics include oxidant pollutants, sulfur dioxide and acid aerosols, particulates, bioaerosols, building-related illness, volatile organic compounds, environmental tobacco smoke and radon. Also covers host susceptibility factors, risk assessment, the influence of global warming, and regulation and public policy.

Student evaluation: Student evaluation based on mid-term and final exams.

183.642 THE RESPIRATORY SYSTEM UNDER STRESS. (2 units). Third term.

Departmental faculty.

Identifies the responses of the pulmonary system to physiological and environmental stress, presenting information from both human and research laboratory model experimentation. Reviews ozone as a prototypal environmental stress, and exercise as an example of physiologic stress. Discusses epithelial, circulatory, and ventilatory responses of the pulmonary system, as well as susceptibility factors and biomarkers to stress.

Student evaluation: Student evaluation based on an exam.

Prerequisites: 183.631.

Consent of instructor required.

183.643 ESSENTIALS OF PULMONARY FUNCTION MEASUREMENTS. (3 units).

Fourth term. Mitzner, Wayne.

Presents the theory and fundamentals underlying the measurement of pulmonary function in clinical and experimental studies. Discussions address pulmonary function, lung disease, asthma and lung pathology. The course considers the following topics and measurements; lung elasticity, lung volumes, spirometric indices, ventilation, perfusion, diffusion, and imaging assessments of lung function. Instructional material includes books, scientific papers, and practical demonstrations.

Student evaluation: Student evaluation based on written final exam.

Prerequisites: Basic course in mammalian physiology.

186.601 INTRODUCTION TO RADIATION HEALTH SCIENCES. (5 units). First term.

Links, Jonathan.

Lectures, laboratories, and demonstrations cover the basic mathematic and physical principles underlying medical and research uses of ionizing radiation in physiology and biochemistry. Topics include radioactive decay processes, properties of particulate and electromagnetic radiations, production of x-rays, interaction of radiation with matter, use of radiation detection instruments, gamma ray spectrometry, radiation dosimetry, tracer theory, waste disposal, radiologic safety, and statistics of counting radioactive materials.

Student evaluation: Student evaluation based on mid-term and final exams.

186.610 NUCLEAR INSTRUMENTATION. (6 units). Second term. Links, Jonathan.

Lectures and laboratory sessions provide a basic understanding of the theory of operation, practical limitations of use, and principles of selection of nuclear radiation detection instruments, emphasizing application to problems in radiochemistry and nuclear medicine.

Prerequisites: 186.601, 186.670, 186.680, or equivalent.

* Not offered every year as indicated.

186.620* RADIOCHEMISTRY. (6 units). Second term. Baidoo, Kwamena. Not offered 2005-2006.

Provides a background in the chemical and physical aspects of radioactive tracer techniques as applied to work in physical, organic, and biological chemistry. Topics include preparation and counting of samples and standards; microchemical techniques; techniques for the separation and identification of radionuclides and tagged compounds; radioisotope tagging; tracer techniques; radiometric analysis; and neutron activation analysis.

Student evaluation: Student evaluation based on written exams and laboratory reports.

Prerequisites: 186.601, 186.680 or equivalent or consent of instructor.

Consent of instructor required.

186.630 RADIOPHARMACOLOGY. (4 units). Fourth term. Dannals, Robert.

Presents principles governing the clinical and pharmacological use of radioisotopes. Covers methods of developing, testing, and evaluating radiopharmaceuticals, emphasizing the preparation and quality control of short-lived radiopharmaceuticals. Also examines economic and legal aspects of radiopharmacology. Laboratories involve preparation and use of radiopharmaceuticals.

Prerequisites: 186.601, 186.610 and 186.620.

Consent of instructor required.

186.645 RADIATION SAFETY AND DOSIMETRY. (3 units). Third term. Links, Jonathan.

This self-paced tutorial course covers basic radiation safety and dosimetry, including maximum permissible dose, regulatory limits, factors influencing dose from external and internal sources, and methods of estimating dose. Primarily intended for students in the Division of Radiation Health Sciences.

Student evaluation: Student evaluation based on a paper.

Prerequisites: 186.601.

Consent of instructor required.

186.660 RADIOBIOLOGY. (2 units). Third term. DeWeese, Theodore; Dillehay, Larry.

Describes in depth the effects of ionizing radiation on biological systems, from physical interaction between radiations and biomolecules to the manifestation of such interactions as biological changes in cells, tissues, and organisms. Emphasizes cellular radiobiology, DNA damage and repair, radiation carcinogenesis, and tumor radiobiology.

Student evaluation: Student evaluation based on a research paper and an exam.

Prerequisites: Proficiency in biology or biomedical sciences; reasonable proficiency in math.

Consent of instructor required.

186.670 CRITICAL PUBLIC HEALTH ISSUES CONCERNING IONIZING RADIATION. (3 units). Third term. Baidoo, Kwamena.

Presents the physical foundations of radiation use in medicine and industry and the public health problems associated with it. Optional laboratory experience in an area of student's interest available. Designed for students without strong backgrounds in the physical sciences.

Student evaluation: Student evaluation based on an exam.

187.610 PRINCIPLES OF TOXICOLOGY. (4 units). First term. Trush, Michael. Also offered via the Internet, second term.

Examines basic concepts of toxicology as they apply to environmental toxicology. Discusses distribution, cellular penetration, metabolic conversion, and elimination of toxic agents, as well as the fundamental laws governing the interaction of foreign chemicals with biological systems. Focuses on the application of these concepts to the understanding and prevention of mortality and morbidity resulting from environmental exposure to toxic substances.

Student evaluation: Student Evaluation consists of a series of open book quizzes (6) and a closed book comprehensive final.

Prerequisites: Introduction to Online Learning; a background in chemistry (particularly organic chemistry) and biology is useful.

187.620* TOXICOLOGICAL PATHOLOGY.

(4 units). Fourth term. Gabrielson, Kathleen. Next offered 2005-2006.

Focuses on pathophysiology and pathologic responses of toxicity induced by toxins of the cardiovascular, pulmonary, reproductive, neurological, immune, and gastrointestinal systems. A review of normal histology for the specific organ systems is compared to examples of acute and chronic toxicity to illustrate light microscopic and ultrastructural damage with correlation to altered physiology and function. The course integrates into each organ system studied a review of standard techniques used in toxicity studies including the use of animal necropsy, histology/pathology, various tissue molecular biological techniques, transgenic mice, and noninvasive physiological monitoring.

Student evaluation: Class participation (10%), take-home short-answer midterm (40%) and in-class short-answer final examination (50%).

Prerequisites: 187.610.

Consent of instructor required.

187.630 ROLE OF METABOLISM OF XENOBIOTICS IN TOXICOLOGY. (4 units).

Second term. Kensler, Thomas; Watson, Walter.

Studies the role of metabolism of xenobiotics (foreign compounds) in the activation or inactivation of toxic chemicals. Covers those chemicals known to produce hepatic, pulmonary, and hematopoietic damage, with special emphasis on carcinogenesis. Evaluates the role of chemical structure in predicting toxicologic hazard.

Student evaluation: Student evaluation is based on class participation and examinations.

Prerequisites: 187.610 or consent of instructor.

187.632 MOLECULAR TOXICOLOGY. (4 units). Third term. Biswal, Shyam S.; Culotta, Valeria.

Reviews the mechanisms of environmental toxicology at the molecular and genetic levels through faculty lectures and discussion of scientific papers. Topics include cell signaling pathways involved in protection from environmental insults, including the stress responses to heat shock, oxidative damage and exposure to toxic metals and xenobiotics. Addresses the impact of environmental agents on cell growth, cell death and the multi-stages of carcinogenesis. Presents most recent technological advances in the molecular and genetic tools available to study problems of environmental toxicology, which includes bioinformatics, genomic arrays and transgenic animals.

Student evaluation: Student evaluation based on class participation and a final exam.

Prerequisites: 187.610 and a basic course in molecular biology or consent of instructor.

187.634 MOLECULAR DOSIMETRY AND BIOMARKERS. (4 units). Fourth term.

Groopman, John. Former course number 180.604.

Critically examines the literature of chemical carcinogen DNA and protein adduct formation, and the application of this knowledge to designing molecular dosimetry methods for assessing human exposures. Discusses basic chemical structural identification and epidemiological studies.

Student evaluation: Student evaluation is based on class participation and examinations.

Prerequisites: College physics, organic chemistry, and biochemistry.

187.641* ENVIRONMENTAL

IMMUNOLOGY. (3 units). Third term. Bressler, Joseph. Next offered 2005-2006.

Examines the interrelationships between the immune response and exposure to occupational hazards or environmental pollutants. Lectures focus on the concepts of immunology, immune assessment, toxicology and risk assessment. Case studies with student participation are used as paradigms of environment-related events that cause immunosuppression, autoimmunity and hypersensitivity. This is an introductory course and does not require previous courses in immunology or toxicology.

Student evaluation: Student evaluation based on a written examination, a paper and class participation.

Prerequisites: A background in biology and chemistry.

Consent of instructor required.

187.661* FUNDAMENTALS OF

NEUROTOXICOLOGY. (3 units). Fourth term. Guilarte, Tomas. Not offered 2005-2006.

Examines the mechanisms of action and effects of toxins on the central and peripheral nervous system. Covers structure and function of the nervous systems, factors influencing susceptibility, and biomarkers of neurotoxicity.

Student evaluation: Student evaluation based on a paper and a final exam.

Prerequisites: 187.610 or consent of instructor.

188.680 FUNDAMENTALS OF

OCCUPATIONAL HEALTH. (3 units). First term. Schwartz, Brian. Also offered via the Internet, first term.

Surveys the history of occupational health, case studies in asbestos and tetraethyl lead, the continuum from exposure to disease, the hierarchy of controls in the workplace, occupational health hazards, legal and regulatory issues, provision of occupational health services, methods in comprehensive workplace health improvement, and case studies in occupational disease.

Student evaluation: Student evaluation based on written mid-term and final reports.

Prerequisites: Introduction to Online Learning.

188.681 OCCUPATIONAL HEALTH. (5 units).

Fourth term. Agnew, Jacqueline; Lees, Peter; Mitchell, Clifford; Smith, Gordon.

Lectures, discussions, and visits to various industrial sites present approaches to evaluating the industrial environment, including industrial process, hazards, organization, and management structure. Stresses the importance of interdisciplinary cooperation in the development of occupational health programs, with reference to the U.S. workplace in the next decade.

Student evaluation: Student evaluation based on attendance (particularly site visits), class participation, and presentation of an oral team presentation and a written individual report.

Prerequisites: 188.680 and 187.610. 188.682 and 182.625 are recommended.

Consent of instructor required.

188.684 OCCUPATIONAL AND

ENVIRONMENTAL MEDICINE. (4 units).

Third term. Weaver, Virginia.

Provides health professionals with the clinical knowledge to prevent, diagnose, and treat a wide range of occupational and environmental illnesses and injuries. Covers illnesses and injuries by organ system and selected hazard categories.

Emphasizes the unique challenges of this specialty, including disease prevention within exposed populations, assessment of etiological relations, and information resources. Also discusses the use of biomarkers to improve exposure assessment and medical surveillance in the workplace.

Student evaluation: Student evaluation based on written consultation notes and class participation.

Prerequisites: Clinical experience helpful.

188.685 OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSING.

(2 units). Third term. Fitzgerald, Sheila.

Focuses on occupational and environmental health and the role of the nurse in these settings. Emphasizes the interaction of the worker with his/her work place and the maintenance of health and prevention of disease. Seminars and directed reading focus on approaches to recognizing and preventing occupational and environmental disease, selected hazardous exposures and their health effects, and the components of an occupational health program. A field trip to a local industry provides an opportunity to participate in a plant walk-through and to complete a written work place assessment that incorporates the nursing process.

Student evaluation: Student evaluation is based on a paper/work place assessment.

Consent of instructor required.

188.694 ADVANCED TOPICS IN OCCUPATIONAL HEALTH NURSING. (3 units). Fourth term. Agnew, Jacqueline.

Discusses program considerations, including all levels of prevention within the scope of occupational health nursing, using as examples the health needs of women, shift workers, aging workers, and workers with chronic diseases and impairments. Focuses on strategies for identifying and removing barriers that affect health and work performance; management responsibilities and relationships; and cost issues related to implementing selected preventive and rehabilitative programs. Presents relevant research findings about psychosocial and biological factors.

Student evaluation: Student evaluation based on class participation.

Prerequisites: 188.680 or consent of instructor.

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

Special Studies and Research offers credit to students as they receive specific guidance and attention by one or more departmental faculty for their individual project, the results of which may lead to fulfillment of a degree requirement.

180.800 MPH CAPSTONE ENVIRONMENTAL HEALTH SCIENCES.

(variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

180.820 THESIS RESEARCH ENVIRONMENTAL HEALTH SCIENCES.

(variable units). First, second, third and fourth terms.

180.830 POSTDOCTORAL RESEARCH ENVIRONMENTAL HEALTH SCIENCES.

(variable units). First, second, third and fourth terms.

180.840 SPECIAL STUDIES AND RESEARCH ENVIRONMENTAL HEALTH SCIENCE.

(variable units). First, second, third and fourth terms.

180.860 SPECIAL STUDIES MHS ESSAY. (2 units). Fourth term. Links, Jonathan.

This course is required of all departmental students in the advanced study and research MHS degree program, and provides the opportunity to finalize the required essay.

Student evaluation: Completion and approval of an essay.

Consent of instructor required.

180.880 SPECIAL STUDIES IN ENVIRONMENTAL

HEALTH/COMMUNITY OUTREACH. (1 unit). First, second, third and fourth terms. Trush, Michael; Walker, Polly.

In the first and second terms, introduces concepts of environmental justice and community outreach in environmental health by emphasizing ongoing projects in Baltimore. Presentations are by researchers or project directors and their community partners as well as representatives from city and state government. In the third and fourth terms, students have the opportunity to participate in ongoing community-based research projects. This may serve as an MPH integrating experience.

Consent of instructor required.

Environmental Health Engineering

182.810 FIELD PLACEMENT ENVIRONMENTAL HEALTH

ENGINEERING. (variable units). First, second, third and fourth terms.

182.820 THESIS RESEARCH ENVIRONMENTAL HEALTH

ENGINEERING. (variable units). First, second, third and fourth terms.

182.830 POSTDOCTORAL RESEARCH ENVIRONMENTAL HEALTH

ENGINEERING. (variable units). First, second, third and fourth terms.

182.840 SPECIAL STUDIES/RESEARCH ENVIRONMENTAL HEALTH

ENGINEERING. (variable units). First, second, third and fourth terms.

182.845 SS/R: ADVANCED TOPICS IN AEROSOLS AND AIR POLLUTION. (2 units).

Second term. Geyh, Alison; Kesavan, Jana.

Addresses advanced topics in aerosol science, including aerosol generation, measurements, and sampling methods. Gives special attention to factors affecting aerosol measurements. Discusses sampling for agent-containing and non-agent-containing bioaerosol. Covers aerosol charge on particles and methods to neutralize them. Includes an overview of tropospheric pollution, basic photochemistry and gas-phase kinetics (rate laws, reaction order, rate constants), important photochemical reactions in the atmosphere including the formation and reactions of ozone, and mechanisms of formation and chemical composition of particulate matter focusing on organic and inorganic constituents. A visit to the aerosol laboratory at Edgewood Chemical Biological center is arranged if time permits.

Student evaluation: Mid-term and final exam.

Prerequisites: 182.615.

182.847 SS/R IN FOOD TOXICOLOGY. (2 units). Winter institute. Groopman, John.

Explores the impact of natural and man-made toxins in food. Topics include food additives, drug residues, fungal and bacterial toxins, and biological and industrial contaminants. Special attention is given to the biological effects of toxins such as cancer, birth defects and gene mutations in animals and humans. Concludes with an overview of the social and economic consequences of food toxins, and current measures being taken to prevent future exposure and risk.

Student evaluation: Class discussion and a research paper.

Prerequisites: Basic biology and chemistry helpful, but not required.

Physiology

183.820 THESIS RESEARCH PHYSIOLOGY.

(variable units). First, second, third and fourth terms.

183.830 POSTDOCTORAL RESEARCH

PHYSIOLOGY. (variable units). First, second, third and fourth terms.

183.840 SPECIAL STUDIES AND RESEARCH PHYSIOLOGY. (variable units). First, second, third and fourth terms.

183.861 CURRENT RESEARCH IN PHYSIOLOGY. (1 unit). First, second, third and fourth terms. Reddy, Sekhar.

Covers current research topics in environmental and medical physiology. At least once during the year students present a seminar describing their current research project.

Consent of instructor required.

Radiation Health Sciences

186.810 FIELD PLACEMENT RADIATION HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

186.820 THESIS RESEARCH RADIATION HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

186.830 POSTDOCTORAL RESEARCH RADIATION HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

186.840 SPECIAL STUDIES AND RESEARCH RADIATION HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

Toxicological Sciences

187.820 THESIS RESEARCH TOXICOLOGICAL SCIENCES. (variable units). First, second, third and fourth terms.

187.830 POSTDOCTORAL RESEARCH TOXICOLOGICAL SCIENCES. (variable units). First, second, third and fourth terms.

187.840 SPECIAL STUDIES AND RESEARCH TOXICOLOGICAL SCIENCES. (variable units). First, second, third and fourth terms.

187.861 TOXICOLOGICAL SCIENCES SEMINAR. (2 units). First, second, third and fourth terms. Culotta, Valeria; Kensler, Thomas.

Students, postdoctoral trainees, and faculty present scientific papers from the current literature dealing with biochemical and molecular mechanisms of toxicity agents.

Student evaluation: Student evaluation is based on class participation.

Prerequisites: 187.610 (previous or concurrent).

Consent of instructor required.

Occupational and Environmental Health

188.810 FIELD PLACEMENT OCCUPATIONAL AND ENVIRONMENTAL HEALTH. (variable units). First, second, third and fourth terms.

188.820 THESIS RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH. (variable units). First, second, third and fourth terms.

188.830 POSTDOCTORAL RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH. (variable units). First, second, third and fourth terms.

188.840 SPECIAL STUDIES AND RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH. (variable units). First, second, third and fourth terms.

188.860 TUTORIAL IN TISSUE INJURY, INFLAMMATION, AND REPAIR. (3 units). Fourth term. Dannenberg-Jr., Arthur.

Covers the biochemical and pathophysiological mechanisms of acute and chronic inflammation, including immediate and delayed hypersensitivity and the response to physical, chemical, and microbial tissue damage. Discusses cell membrane function; capillary permeability; histamine, kinins, plasmin, complement, eicosanoids; blood clotting; chemotaxis; and other inflammatory mediators produced by various blood cells.

Student evaluation: Student evaluation based on class participation.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

260.622* PRINCIPLES OF BACTERIAL INFECTION. See Department of Molecular Microbiology and Immunology.

304.620 INTRODUCTION TO PERSUASIVE COMMUNICATIONS: THEORIES AND PRACTICE. See Department of Health Policy and Management.

305.610 ISSUES IN INJURY AND VIOLENCE PREVENTION. See Department of Health Policy and Management.

305.618 AVIATION SAFETY. See Department of Health Policy and Management.

317.600 INTRODUCTION TO THE RISK SCIENCES AND PUBLIC POLICY. See Department of Health Policy and Management.

317.610 RISK POLICY, MANAGEMENT AND COMMUNICATION. See Department of Health Policy and Management.

317.612 QUANTITATIVE METHODS AND CASE STUDIES IN RISK: EXPOSURE ASSESSMENT. See Department of Health Policy and Management.

317.613 QUANTITATIVE METHODS AND CASE STUDIES IN RISK: DOSE RESPONSE. See Department of Health Policy and Management.

317.615 TOPICS IN RISK ASSESSMENT. See Department of Health Policy and Management.

* Not offered every year as indicated.

Epidemiology

Epidemiology may be defined as the study of the distribution and dynamics of disease in human populations. Its purpose is to identify factors relative to humans and their environment that determine the occurrence of disease, and to provide a basis for programs in preventive medicine and public health. Epidemiologic methods are also used to assess the variation, severity, and magnitude of disease and related risks, and resources, and to evaluate the efficacy of new preventive and therapeutic treatments and the impact of new organizational patterns of health care delivery.

The Department of Epidemiology offers a broad educational and research programs in infectious diseases and in almost all areas of chronic disease epidemiology, including cardiovascular and cerebrovascular diseases, respiratory diseases, digestive diseases, congenital malformations, cancer, and occupational diseases. Human genetics, statistical epidemiology, social and behavioral studies health disparities and health outcomes, are of major interest. The faculty are also involved in planning and evaluating community health programs for various diseases, and these activities provide excellent training opportunities for students.

The mission of the Department of Epidemiology is improving the public's health by training epidemiologists and by advancing knowledge concerning causes and prevention of disease and promotion of health. As the oldest autonomous academic department of epidemiology in the world, the Department of Epidemiology of Johns Hopkins University has maintained leadership in fulfilling this mission. The specific goals of the department are to

- Provide the highest quality education in epidemiology and thus prepare the next generation of epidemiologists.
- Advance the science of epidemiology by developing new methods and applications.
- Use epidemiologic methods to investigate the etiology of disease in human populations.
- Use epidemiologic methods in evaluating the efficacy of preventive and therapeutic modalities and of new patterns of health care delivery.
- Develop methodologies for translating epidemiologic research finding into clinical medicine.
- Develop approaches for applying the findings of epidemiologic research in the formulation of public policy and to participate in this formulation and the evaluation of the effects of such policy.

Generally, students specialize in a selected area of interest, but every effort is made to provide as broad a background in epidemiology as possible. All departmental students are therefore required to take the four-course primary sequence of epidemiology, comprised of Principles of Epidemiology, Intermediate Epidemiology, Case Control & Cohort Studies, as well as a four-course sequence in either Statistical Methods in Biostatistics or Methods in Biostatistics. Students also complete courses within the area that they selected as their focus of interest. In addition to the courses listed, the department conducts seminars in which speakers from other institutions or agencies deal with applied epidemiological problems and faculty members and students discuss their current or planned research.

Programs of study are offered leading to six degree programs: Master of Public Health, Master of Health Science, Master of Science, Doctor of Public Health, Doctor of Science, and Doctor of Philosophy degrees. Completion of the requirements for a master's degree in the Department of Epidemiology generally takes two years; a doctoral degree requires at least three or four years. Additional time may be required for those who have a limited background in the biological sciences at the time of admission. Postdoctoral training without a degree goal is also available.

A combined MD/PhD program in Epidemiology is available to students enrolled in the medical sciences doctorate at the Johns Hopkins University School of Medicine.

Additionally, there is an approved residency program in general preventive medicine in the department. A total of three years of training is specified, of which one or more may be academic, and the balance devoted to supervised field experience. Applications may be accepted for the entire period of training or for portions thereof.

Admission—In addition to meeting the general admission requirements of the School, individuals applying to the department should have at least a university-level bachelor's degree, with course work in biology and mathematics. While no specific undergraduate major is specified, candidate should have coursework in biochemistry, anatomy, physiology, mathematics and calculus. A statistics course is also desirable. Those whose area of interest is infectious disease epidemiology must have a solid background in microbiology. Human genetics applicants should have courses in genetics and molecular or cellular biology. It is strongly recommended that applicants to the Clinical Epidemiology program have a background in biomedical/clinical sciences or experience in clinical research. Generally, admission to the doctoral program

is limited to those individuals with significant prior training or experience in epidemiology or related fields, including medicine and other health areas and a masters degree in a health-related field. All applicants are required to submit the results of a recent Graduate Record Examination (GRE) or its equivalent.

Admission to the master's program does not guarantee subsequent admission to the doctoral program. All applicants for doctoral programs are evaluated based on prior professional experience, academic excellence, and their promise as public health/epidemiologic researchers.

In the Statement of Objectives and Plans of the application form, applicants should clearly indicate the degree program desired and the area of concentration, if known; briefly describe their background and accomplishments and discuss the relevance of these accomplishments to epidemiology and to their area of interest. It is critical that applicants discuss their goals in epidemiology, and in public health.

Major Educational Areas and Programs

The Department provides a broad set of training opportunities in general epidemiology and in specific focused areas, including:

- Cancer Etiology and Prevention
- Cardiovascular Diseases
- Clinical Epidemiology
- Clinical Trials
- Epidemiology and Biostatistics of Aging
- Methodology
- Human Genetics/Genetic Epidemiology
- Infectious Diseases
- Occupational and Environmental Epidemiology
- Risk Sciences

Training is offered through a core methodologic sequence with the addition of more focused courses in the specific areas. For most training areas, there are required courses. Students are expected to tailor their curricula, working with their advisors to create a comprehensive plan of study and research.

Faculty interests are broad, covering many very specific and general topics. Incoming students may want to link with faculty who have shared interests although this is not required. Examples of some of areas of faculty research are given below:

- Epidemiologic Methodology
- Gene-environment Interaction
- Environmental Induced Illness
- Industrial and Occupational Exposures

- Risk Assessment
- Prevention of Infectious Diseases
- HIV Infection and AIDS
- Evaluation of Health Behaviors
- Outcomes Research
- Sleep Disorders
- Evaluation of Access to Health Care
- Molecular Epidemiology of Cancer
- Vision Research
- Social Epidemiology

The Department offers selected opportunities such as The Fogarty AIDS International Training and Research Program is funded through Fogarty International for students who are active in HIV/AIDS collaborative research. Interested applicants should contact Denise Carolan (dcarolan@jhsph.edu or 410-955-1514). Also, The Johns Hopkins Tuberculosis Training and Research Program is a training program for students from Peru, India, South Africa, Brazil, and USA interested in tuberculosis prevention and control in developing countries.

The department's broad research portfolio is the foundation for research training. In addition, the department houses a number of special resources and facilities that figure in the teaching mission.

Special Resources and Facilities

The working relationships that the department enjoys with other departments within the University and a number of other institutions both in the United States and in various schools around the world concerned with health and disease offer students opportunities to broaden their experience. These resources include the Johns Hopkins School of Medicine and the Johns Hopkins Hospital and Comprehensive Cancer Center, metropolitan Baltimore hospitals, the Social Security Administration, the Maryland State Department of Health and Mental Hygiene, Baltimore City Health Department, and a number of institutions in other cities. In the past, arrangements have been made for students and faculty to work at the National Center for Health Statistics, the Frederick Cancer Research Center of the National Cancer Institute, the National Institutes of Health, Walter Reed Army Institute of Research, U.S. Veterans Administration, Armed Forces Institute of Pathology, Centers for Disease Control, and the World Health Organization. Our students also enjoy rotations with our collaborative centers at Chiang Mai University in Thailand and in Blantyre, Malawi. Additional learning opportunities for students and fellows are listed below and are described in the

School-affiliated Centers and Institutes chapter of this catalog.

Within the Johns Hopkins Bloomberg School of Public Health, joint programs with other departments are also possible. For more information on the centers, including the Center for Clinical Trials, the Johns Hopkins Comprehensive Cancer Center, the Risk Sciences and Public Policy Institute, and the Welch Center for Prevention, Epidemiology and Clinical Research, see the School-affiliated Centers and Institutes chapter.

The Risk Sciences and Public Policy Institute is an interdepartmental program offering research and training opportunities designed to bridge science and public policy. The institute serves as an academic focus for addressing the critical science and policy issues inherent in managing disease risks from environmental and occupational exposures. Research by the faculty at the institute focuses on strengthening the application of science-based risk analysis and encouraging innovative public health solutions to complex risk problems. The institute's flagship educational programs provide professionals and decision makers with the tools necessary to bridge health research, environmental science, and policy. A formal certificate, comprised of designated course work, is offered. For more information, contact Dr. Ronald White at 410-614-4961. Email rwhite@jhsph.edu.

The Cancer Epidemiology Training Program is a joint effort of the departments of Epidemiology, Environmental Health Sciences, Health Policy and Management, Oncology, and Medicine with faculty representing the disciplines of epidemiology, medicine, virology, biostatistics, genetics, and nursing. The program provides pre- and post-graduate training to highly qualified students. Students in the training program may be degree candidates for master's or doctoral degrees or postdoctoral fellows. All trainees follow a basic core curriculum, including courses in epidemiologic and biostatistical methods, and choose a multi-level course series of methods and issues in cancer epidemiology, prevention and control of cancer, and ethical issues in the conduct of cancer research.

The program is designed to provide multidisciplinary training to the fellows in the program and to develop them as the next generation of investigators in cancer epidemiology, prevention, and control. Graduates of the program occupy major positions in the U.S. and around the world in both academic and government agencies and institutions. Possible funding through an Epidemiology training grant is open to U.S. citizens or U.S. permanent residents only. Interested applicants should submit a separate letter of

intent in addition to their statement of goals and objectives along with the regular admissions packet to the Admissions Office.

The Epidemiology Students' Organization, (ESO), is comprised of all master's, doctoral, and post-doctoral students in the Department of Epidemiology. As a faculty and administration-independent organization, our mission is to promote the professional development of students in the department and to act as an advocate for student needs. This is accomplished by working with faculty, administration, and other student organizations in the School. Our goal is to create an environment that facilitates discussion, student-student interaction, and networking.

Epidemiology

Faculty data as of April 1, 2004. For current listing, please click here:

http://faculty.jhsph.edu/Faculty_EPI.cfm

Jonathan M. Samet, M.D., M.S.

Chair of the Department.

Primary Faculty

Joseph H. Abraham, Sc.D., M.S.

Assistant Scientist. *Epidemiology, Environmental Epidemiology, Air Pollution, Asthma.*

Anthony Alberg, Ph.D., M.P.H.

Assistant Professor. *Cancer epidemiology; cancer prevention; cancer control; tobacco, health effects; tobacco, prevention and control; cigarette smoking.*

Haroutune K. Armenian, M.D., M.P.H., Dr.P.H.

Professor. *Epidemiology, Disasters, Health Services Research, Psychopathology & Physical Illnesses.*

Allyn Arnold, M.P.H.

Instructor. *Epidemiology.*

Brad C. Astor, Ph.D., M.P.H., M.S.

Assistant Professor. *Cardiovascular, kidney, anemia, dialysis, vascular access.*

Terri H. Beaty, Ph.D.

Professor. *Genetic epidemiology, gene-environmental interaction, oral clefts.*

Chris Beyrer, M.D., M.P.H.

Associate Research Professor. *HIV/AIDS, molecular epidemiology, human rights, Burma, Thailand, China.*

David D. Celentano, Sc.D., M.H.S.

Professor. *Epidemiology, international health, HIV, AIDS, STDs, behavior, Asia, AIDS prevention.*

Jeanne B. Charleston, B.Sc., R.N.

Research Associate.

Haitao Chu

Assistant Research Professor. *Biostatistics; Epidemiology.*

Bernice H. Cohen, Ph.D., M.P.H.

Professor Emerita.

Stephen R. Cole, Ph.D., M.P.H.

Assistant Research Professor. *Epidemiology, quantitative epidemiologic methods, HAART, AIDS.*

George W. Comstock, M.D., Dr.P.H., M.P.H.

Professor Emeritus. *Epidemiology, Community-based epidemiologic studies; tuberculosis control; controlled trials.*

Josef Coresh, M.D., Ph.D., M.H.S.

Associate Professor. *Epidemiology, Cardiovascular Epidemiology, Kidney Disease, Genetic Epidemiology, Research Methods, Heart, Kidney.*

Rosa M. Crum, M.D., M.H.S.

Associate Professor. *Epidemiology, Addictions; Aging; Alcohol/alcoholism; Depression; Drugs/drug abuse; Epidemiology; Epidemiology, psychiatric; Gerontology/aging; Mental disorders; Mental/emotional health; Psychiatric epidemiology; Psychopathology; Risk factor/analysis.*

Jingzhong Ding, M.D., Ph.D.

Research Associate.

M. Daniele Fallin, Ph.D.

Assistant Professor. *SNP, genetic epidemiology, haplotypes, SNPs.*

Homayoon Farzadegan, Ph.D.

Research Professor. *Epidemiology, infectious diseases, viral diseases transmitted by blood and other body fluids; and epidemiology and natural history studies.*

Manning Feinleib, M.D., M.P.H., Dr.P.H.

Professor. *Epidemiology, cardiovascular diseases, vital and health statistics, and disparities.*

Nancy Fink, M.P.H.

Associate Scientist. *Epidemiology, clinical epidemiologic methods, cohort studies, randomized trials, renal disease.*

Jean G. Ford, M.D.

Associate Professor. *Lung cancer, asthma, health disparities, clinical trials.*

Robin Fox, M.S.

Research Associate. *Epidemiology, HIV/AIDS, Epidemiologic Methods, Academic Ethics.*

Noya Galai, Ph.D.

Associate Research Professor. *Applied epidemiology, public health, policy.*

Tiffany L. Gary, Ph.D., M.H.S.

Assistant Research Professor. *Epidemiology; Minority Health; Diabetes; Social Determinants of Disease; Community-based Interventions; Obesity; Health Disparities.*

Thomas A. Glass, Ph.D.

Associate Professor. *Chronic disease epidemiology; aging; psychosocial epidemiology; Behavior and Health, cerebrovascular disease.*

Vivian Fei-Ling Go, M.P.H.

Assistant Professor. *Epidemiology, HIV, STDs, behavior, Asia, prevention, vulnerable populations.*

Elizabeth T. Golub, Ph.D., M.D.

Assistant Scientist.

Leon Gordis, M.D., M.P.H., Dr.P.H.

Professor. *Epidemiology of childhood and chronic diseases; health services evaluation; privacy and confidentiality in research; public policy; use of epidemiologic data in the courts.*

Patti E. Gravitt, Ph.D., M.S.

Assistant Professor. *Epidemiology, human papillomavirus; cervical cancer; molecular epidemiology; misclassification; viral etiology of cancer; pcr.*

Eliseo Guallar, M.D., Dr. P.H., M.P.H.

Assistant Professor. *Cardiovascular disease epidemiology; epidemiologic methods; polyunsaturated fatty acids; fish oils.*

Kathy Helzlsouer, M.D., M.H.S.

Professor. *Epidemiology, Cancer prevention; chemoprevention; nutrition and cancer; endogenous hormones and cancer; cancer risk assessment.*

Joel Hill, M.S.

Instructor. *Epidemiology.*

Sandra C. Hoffman, M.A., M.P.H.

Assistant Scientist. *Epidemiology, research methods, community-based studies, health surveys.*

Janet T. Holbrook, Ph.D., M.P.H.

Assistant Research Professor. *Epidemiology, Clinical trials, surrogate outcomes, prospective observational studies.*

Han-Yao Huang, Ph.D., M.P.H.

Assistant Research Professor. *Etiology and chemoprevention of cancer and cardiovascular disease, oxidative stress, gene-environment interaction, cancer early detection, nutrition, micronutrients, randomized controlled trial, epidemiologic methods.*

John B. Hylton, Ph.D., M.H.S.

Research Associate. *HIV, AIDS, epidemiology, behavioral epidemiology, behavior, gay, bisexual, MSM, adolescents, sexual identity, African American, microbicides, rectal microbicides, surveillance, web-based surveillance, cohort studies, recruitment methods.*

Lisa P. Jacobson, Sc.D., M.S.

Associate Research Professor. *Epidemiology, epidemiologic methods; cohort studies; HIV; cancer.*

Jacky M. Jennings, Ph.D., M.D.

Assistant Scientist.

Lizette Johnson, M.S.

Research Associate. *Epidemiology, HIV/AIDS, homo-sexuals, IDUs.*

Sukon Kanchanaraksa, Ph.D.

Assistant Scientist. *Epidemiology, distance education, asthma.*

Wen Hong Linda Kao, Ph.D, M.H.S.

Assistant Professor. *Epidemiology, Cardiovascular, diabetes, obesity, genetic epidemiology.*

Surinda Kawichai, Ph.D., M.Sc.

Assistant Scientist. *Epidemiology.*

Newton I. Kumwenda, Ph.D., M.P.H., M.Sc.

Research Associate.

Shenghan Lai, M.D., M.P.H.

Associate Research Professor. *Epidemiology.*

Li-Ching Lee

Assistant Scientist. *Psychiatric epidemiology, developmental disabilities, Autism.*

Barbara K. Martin, Ph.D.

Assistant Professor. *Epidemiology, clinical trials, quality of life.*

Genevieve M. Matanoski, M.D., M.P.H., Dr.P.H.

Professor. *Epidemiology.*

Curtis L. Meinert, Ph.D.

Professor. *Clinical trials methodology, design and conduct of multicenter trials, research ethics.*

Yuan-I "Nancy" Min, Ph.D., M.H.S., M.P.H.

Assistant Scientist. *Clinical trials; epidemiology; ethics; exposure assessment.*

Shruti H. Mehta, Ph.D., M.P.H.

Assistant Research Professor. *HIV, Hepatitis C, India, injection drug users, HIV/HCV co-infection.*

Mary Monk, Ph.D., M.A.

Professor Emerita.

Alvaro Muñoz, Ph.D.

Professor. *Statistics in Epidemiology, Cohort Studies, Infectious Diseases, Biomarkers, Kidney Disease, Post marketing surveillance, Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS), Survival Analysis, Analysis of Longitudinal Data.*

Kenrad Nelson, M.D.

Professor. *Epidemiology, HIV/AIDS, tropical medicine, leprosy, nosocomial infections, hepatitis, infections in drug users, and tuberculosis.*

Craig J. Newschaffer, Ph.D., M.S.

Associate Professor. *Epidemiology, autism; breast cancer; comorbidity; gene-environment interaction.*

Elizabeth A. Platz, Sc.D., M.P.H.

Assistant Professor. *Epidemiology, prostate cancer, benign prostatic hyperplasia, colorectal cancer, adenomatous polyps, diet, lifestyle, race, genetics, inflammation, insulin, obesity, sex steroid hormones, vitamin D.*

Neil R. Powe, M.D., Ph.D., M.P.H.

Professor. *Kidney Disease—Epidemiology and Health Services Research; Cardiovascular—Disease Epidemiology and Health Services Research; Effectiveness and Outcomes Research; Technology Assessment; Health and Health Care Disparities; Economic Evaluations in Health Care; Evidence-based Practice and Meta-analysis.*

Vu Minh Quan, M.D.

Assistant Research Professor.

Jonathan M. Samet, M.D., M.S.

Professor. *Epidemiology, tobacco, Effects of inhaled pollutants, respiratory diseases, cancer, risk assessment.*

Eric C. Seaberg, Ph.D., M.P.H.

Assistant Research Professor. *Epidemiologic methods, cohort studies, case-control studies, HIV/AIDS, viral hepatitis, liver transplantation, longitudinal data analysis, survival analysis.*

Sharada Shankar, Ph.D., M.P.H.

Assistant Scientist. *Epidemiology, Nutrition education, Cancer control and prevention, Cancer knowledge assessment among minority populations.*

Susan Gail Sherman, Ph.D., M.P.H.

Assistant Research Professor. *Epidemiology, injection drug users, social networks, interventions, social epidemiology, behavioral sciences, sex workers.*

Francisco Sifakis, Ph.D., M.P.H.

Research Associate. *Epidemiology; infectious diseases; human immunodeficiency virus (HIV); sexually transmitted diseases (STD); surveillance; outreach; health disparities; prevention.*

Michael J. Silverberg, Ph.D., M.P.H.

Assistant Research Professor. *Epidemiology; infectious diseases; human immunodeficiency virus (HIV); human papillomavirus (HPV); juvenile onset recurrent respiratory papillomatosis.*

Sudha Sivaram, Dr. P.H., M.P.H.

Research Associate. *Epidemiology, HIV/AIDS prevention programs, sustainability of community-based reproductive health interventions, role of income generation activities on HIV/reproductive health.*

Alfred Sommer, M.D., M.H.S.

Professor. *Epidemiology, international health, ophthalmology, vitamin A, blindness prevention, glaucoma, visual disorders, micronutrients, clinical guidelines.*

Somchai Sriplienchan, M.D.

Research Associate.

Frances Stillman, Ed.D.

Associate Research Professor. *Tobacco, tobacco control, smoking, smoking cessation, policy research, evaluation, surveillance.*

Steffanie A. Strathdee, Ph.D., M.S.

Associate Professor. *Epidemiology, HIV/AIDS, Hepatitis C, vaccines, prevention, interventions, injection drug users, access to care, needle exchange programs.*

Sol Su, Sc.D.

Research Associate. *Epidemiology, Population Dynamics.*

Moyses Szklo, M.D., M.P.H., Dr.P.H.

Professor. *Epidemiology Hypertension Atherosclerosis cognitive Risk ARIC MESA Coronary Heart Disease Population-based Carotid Arterial Subclinical.*

Taha El Tahir Taha, Ph.D., M.P.H., M.C.M., M.B.B.S.

Associate Professor. *Africa, AIDS, Antiretrovirals, Epidemiology, Infectious Diseases, Malaria, Malawi, Microbicides, Perinatal HIV Transmission, Sexually Transmitted Diseases.*

Susan Tonascia, Sc.M.

Associate Scientist. *Epidemiology; Design and Coordination of Clinical Trials; Clinical Trials Methodology; Data Collection and Forms Design; Training.*

Aynur Ünalp-Arida, M.D., Ph.D.

Assistant Scientist. *Epidemiology, clinical trials gender drug approval presentation publication.*

Kala Visvanathan, M.B.B.S., M.H.S.

Assistant Professor.

Ronald H. White, M.S.T.

Associate Scientist. *Air pollution, environmental health, risk assessment.*

Nathan D. Wolfe, Sc.D.

Assistant Professor. *Bushmeat, AIDS, zoonosis, Molecular epidemiology, pathogen ecology and evolution, cross-species transmission, primatology, Cameroon, Central Africa, phylogenetics, GIS, international health, RNA virus, evolution, retrovirus, arbovirus, filovirus, monkeypox, malaria, ebola, lassa, marburg, dengue, yellow fever, leptospirosis, rabies, spumaretrovirus, simian foamy virus (SFV), SIV, HIV, STLV, HTLV, hepatitis.*

Qian-Li Xue, Ph.D., M.S.

Assistant Scientist. *Epidemiology, Epidemiological design; latent variable; longitudinal data; measurement error; missing data; multivariate categorical data.*

Yin Yao, Ph.D., M.Phil., M.A.

Assistant Professor. *Genetic Epidemiology, Linkage analysis, linkage disequilibrium, variance components method, genetic modifier, breast cancer, FAP, nasopharyngeal carcinoma.*

Hsin-chieh (Jessica) Yeh, Ph.D.

Assistant Scientist. *Epidemiology; diabetes; radiation; cancer.*

Joint Appointments**James C. Anthony, Ph.D., Sc.M.**

Professor of Mental Health. *Mental Health, Mental Hygiene, tobacco, NIDA, NIMH, NIAAA, drug dependence, psychiatric envirome & enviromics generally.*

Lawrence J. Appel, M.D., M.P.H.

Professor of Medicine, School of Medicine. *Clinical investigation in cardiovascular disease; hypertension.*

Kathleen Carole Barnes, Ph.D.

Associate Professor in the Department of Medicine, Division of Clinical Immunology in the School of Medicine.

John G. Bartlett, M.D.

Professor of Medicine, School of Medicine. *Civilian Biodefense Strategies, HIV/AIDS, Diarrhea (C. difficile - associated diarrhea and antibiotic-associated diarrhea), Pneumonia (community-acquired), Anaerobic infections, HIV primary care, General Infectious Diseases, HIV and Hemophilia, HIV Managed Care*

Eric B. Bass, M.D., M.P.H.

Associate Professor in the Division of General Internal Medicine in the School of Medicine of Welch Center.

Leigh Ebony Boulware, M.D., M.P.H.

Assistant Professor of Medicine, School of Medicine.

Frederick Brancati, M.D., M.H.S.

Associate Professor of Medicine, School of Medicine.

Steven R. Brant, M.D.

Associate Professor of Medicine in the School of Medicine.

Ronald Brookmeyer, Ph.D.

Professor of Biostatistics. *Biostatistics, Clinical trials; epidemic models; epidemiological statistics; longitudinal data analysis; multivariate analysis; survival analysis.*

Timothy J. Buckley, Ph.D., M.H.S.

Associate Professor in the Department of Environmental Health Sciences. *Environmental Health Sciences, Biomarkers, Exposure Assessment, Total Exposure, Community-based Participatory Research Body-Burden, Aggregate Exposure, Risk Assessment Pesticides, Metals, Volatile Organic Compound (VOCs), Polycyclic Aromatic Hydrocarbons (PAH), Dietary exposure, Inhalation, Ingestion, Dermal Exposure, Alveolar Breath, Blood, Urine, Blood / Breath Partition Coefficient, Exposure Misclassification, Asthma, Cancer, Community.*

Donald S. Burke, M.D.

Professor of International Health. *International Health, Vaccines, viruses, infectious diseases, epidemiology, HIV, AIDS, measles, dengue, smallpox, emerging infectious diseases, bioterrorism, computational models.*

Richard E. Chaisson, M.D.

Professor of Medicine, School of Medicine. *Tuberculosis, Infectious Diseases.*

Paulo H.M. Chaves, M.D., Ph.D.

Assistant Professor in the Division of General Internal Medicine, Department of Medicine of the School of Medicine. *Anemia, hemoglobin level, Internal Medicine.*

Howard D. Chilcoat, Jr., Sc.D., M.H.S.

Associate Professor in the Department of Mental Health. *Mental Health, Mental Hygiene, drug dependence, drug abuse, epidemiology.*

Jeanne M. Clark, M.D., M.P.H.

Assistant Professor in the School of Medicine and the Welch Center.

Lisa Cooper, M.P.H.

Associate Professor in the School of Medicine.

Sara E. Cosgrove, M.D., M.S.

Assistant Professor in the Department of Medicine of the Division of Infectious Diseases in the School of Medicine.

Arthur M. Dannenberg Jr., M.D., Ph.D.

Professor of Environmental Health Sciences. *Tuberculosis; BCG; sulfur mustard; cytokines, adhesion molecules; allergic dermatitis; macrophages and lymphocytes; cell mediated immunity (CMI); delayed-type hypersensitivity DTH).*

Gail L. Daumit, M.D., M.H.S.

Assistant Professor in the Division of General Internal Medicine in the School of Medicine of Welch Center.

Marie Diener-West, Ph.D.

Professor in the Department of Biostatistics.
Biostatistics, clinical trials, oncology, ophthalmology, ocular melanoma, statistical methods, statistical education.

Gregory Diette, M.D., M.H.S.

Assistant Professor in the School of Medicine.
Epidemiology of lung diseases, asthma, quality assurance, outcomes.

Francesca Dominici, Ph.D.

Associate Professor in the Department of Biostatistics. *Biostatistics, Categorical data; clinical data; computing; dose-response models; environmental pollution; environmental statistics; epidemiologic statistics; hierarchical models; incomplete data analysis; longitudinal data analysis; meta-analysis; missing data; Monte Carlo Markov chain techniques; risk assessment; spatial statistics; statistical computing.*

Jonathan M. Ellen, M.D.

Associate Professor of Pediatrics, School of Medicine.

Emily Erbelding, M.D., M.P.H.

Assistant Professor in the School of Medicine.

Thomas (Tate) P. Erlinger, M.D., M.P.H.

Assistant Professor in the Department of Medicine of the School of Medicine. *Internal Medicine, Effects of Diet and Sodium Intake on Blood Pressure: Subgroup Analysis of the DASH-Sodium Trial.*

Adrienne S. Ettinger, Sc.D., M.P.H.

Assistant Professor in the Department of Health Policy and Management. *Environmental epidemiology, pediatric and perinatal epidemiology, children's environmental health, biomonitoring, lead poisoning prevention, health policy, tracking, surveillance, public health practice.*

Joseph A. Eustace, M.B. B.A.O., B.Ch., M.R.C.P.I., M.H.S.

Assistant Professor in the Department of Medicine of the School of Medicine.

Daniel Ford, M.D., M.P.H.

Professor of Medicine, School of Medicine.

Linda Fried, M.D., M.P.H.

Professor of Medicine, School of Medicine.
Epidemiology, aging, frailty and disability, Center on Aging and Health, Clinical and Population-based Research on Aging, Women's Health and Aging, women's health, women and aging, frailty, Cardiovascular Health Study, Gingko Evaluation for Memory, Older Americans Independence Center, Experience Corps.

Susan Furth, M.D., Ph.D.

Associate Professor in the Department of Pediatrics, Division of Pediatric Nephrology of the School of Medicine and the Welch Center.

Joel E. Gallant, M.D, M.P.H., F.A.C.P.

Associate Professor in the Department of Medicine, School of Medicine.

Charlotte Ann Klaus Gaydos, M.S., M.P.H., Dr. P.H.

Associate Professor in the Department of Medicine of the School of Medicine.

Kelly A. Gebo, M.D., M.P.H.

Assistant Professor in the Division of Infectious Diseases in the Department of Medicine.

Allan C. Gelber, M.D., M.P.H.

Associate Professor of Medicine, School of Medicine.

Maura Lianne Gillson, M.D., Ph.D.

Assistant Professor in the School of Medicine.

Gregory E. Glass, Ph.D.

Professor of Molecular Microbiology and Immunology. *VGIS, Remote Sensing, Hantavirus, Lyme disease, Malaria, zoonoses, rodent-borne diseases.*

Sherita Hill Golden, M.D., M.H.S.

Assistant Professor in the Division of Endocrinology and Metabolism of the School of Medicine and the Welch Center.

Lynn R. Goldman, M.D., M.P.H.

Professor of Occupational and Environmental Health. *Environmental Health Sciences, environmental health policy, pediatric environmental health, children, infants, lead, methylmercury, pesticides, chemicals, environmental epidemiology.*

Steven N. Goodman, M.D., Ph.D.

Associate Professor of Oncology, School of Medicine.

Ronald H. Gray, M.B.B.S., M.F.C.M., M.Sc.

Professor of Population Dynamics. *Population and Family Health Sciences, Epidemiology; STDs; HIV; pregnancy outcome; contraception; lactation; low birthweight; infant mortality; occupational and reproductive health.*

Ada Hamosh, M.D., M.P.H.

Associate Professor in the Department of Pediatrics of the School of Medicine.

Barbara Hawkins, Ph.D.

Professor of Ophthalmology, School of Medicine.

Donald A. Henderson, M.D., M.P.H.

Professor of Health Policy and Management. *Surveillance, smallpox, eradication, biodefense, biological weapons, bioweapons, bioterrorism, anthrax, polio, influenza.*

Craig W. Hendrix, M.D.

Associate Professor in the Division of Clinical Pharmacology in the School of Medicine.

Neil A. Holtzman, M.D.

Professor of Pediatrics, School of Medicine.

Bernard G. Jaar, M.D., Ph.D.

Assistant Professor in the School of Medicine.

Douglas Jabs, M.D., M.S.

Professor. School of Medicine.

Joanne Katz, Sc.D.

Professor of International Health. *Epidemiology, ophthalmology, biostatistics, community trials, blindness, visual impairment, glaucoma, cataract, trachoma, refractive error, ocular trauma, vitamin A, iron, zinc, micronutrients.*

John H. Kempen, M.D., Ph.D., M.P.H., M.H.S.

Assistant Professor in the Department of Ophthalmology in the School of Medicine. *Ophthalmology, HIV, AIDS, epidemiology, eye disease, uveitis, scleritis, research, clinical trial.*

Kristen H. Kjerulff, Ph.D.

Associate Professor in the Department of Gynecology and Obstetrics.

Michael Klag, M.D.

Professor of Medicine, School of Medicine.

Carl A. Latkin, Ph.D., M.S.

Associate Professor in the Department of Health Policy and Management. *Health Policy and Management, HIV, social networks, AIDS, prevention, drug users, urban health, needle exchange, overdose, social context.*

Kung-Yee Liang, Ph.D.

Professor of Biostatistics. *Biostatistics, Epidemiological statistics; foundations of inference; hierarchical models; human genetics; longitudinal data analysis; multivariate analysis; statistical genetics.*

Joao A.C. Lima, M.D.

Associate Professor of Medicine at the School of Medicine and Director of Echocardiography.

J. Craig Longnecker, M.D., Ph.D., M.P.H.

Assistant Professor in the Division of General Internal Medicine of the School of Medicine and the Welch Center.

Joseph B. Margolick, M.D., Ph.D.

Professor of Molecular Microbiology and Immunology. *Human immunodeficiency virus, immune assessment, immune deficiency, T-cells, flow cytometry, cell sorting, pathogenesis of HIV.*

Harry M. Marks, Ph.D.

Associate Professor in the Department of History of Science, Medicine and Technology in the School of Medicine.

Justin McArthur, M.B.B.S., M.P.H.

Professor of Neurology, School of Medicine.

Melvin G. McInnis, M.D.

Associate Professor in the Department of Psychiatry in the School of Medicine.

Victor A. McKusick, M.D.

Professor of Medicine, School of Medicine.

William G. Merz, Ph.D.

Professor of Laboratory Medicine in Pathology, School of Medicine.

Edgar (Pete) Raymond Miller, III, M.D., Ph.D.

Associate Professor in the Division of Internal Medicine of the School of Medicine and the Welch Center.

Katherine Miller-Bass, M.D., M.H.S.

Assistant Professor of Obstetrics and Gynecology, School of Medicine.

Graham Mooney, Ph.D.

Assistant Professor.

Richard Moore, M.D., M.H.S.

Professor of Medicine, School of Medicine.

Richard Morrow, M.D., M.P.H.

Professor of International Health. *International Health, Community Health & Health Systems, Application of epidemiological methods to health systems and quality assurance management methods.*

David E. Newman-Toker, M.D.

Assistant Professor of Neurology in the School of Medicine.

Kimberly O. O'Brien, Ph.D.

Associate Professor in the Department of International Health. *International Health, pregnancy; osteoporosis; calcium, iron and zinc; mass spectrometry, vitamin D, cystic fibrosis, minority health.*

Patricia O'Campo, Ph.D.

Professor of Maternal and Child Health. *Population and Family Health Sciences, Women's health, Intimate partner violence, Multi-level Modeling, Infant mortality, Social epidemiology, Pregnancy, Public Health, Smoking Behavior, Statistics, Violence, AIDS.*

Jonathan A. Patz, M.D., M.P.H.

Assistant Scientist in the Department of Environmental Health Sciences. *Environmental Health Sciences, Air Pollution, Deforestation, Dengue Fever, Ecosystem, El Niño, Geographic Information Systems (GIS), Global Climate Change, Greenhouse Warming, Heat Mortality, Integrated Assessment, Land use, Malaria, Modeling, Remote sensing, Vector-borne diseases, Water-borne Diseases.*

Trish M. Perl, M.D., M.Sc.

Associate Professor of Infectious Diseases, School of Medicine

Steven Piantadosi, M.D.

Professor of Oncology, School of Medicine. *Biostatistics, Mathematical models of tumor growth; statistical methods for the design and analysis of clinical trials.*

Elizabeth W. Pugh, Ph.D., M.P.H., R.N.

Assistant Professor in the Department of Pediatrics of the School of Medicine.

Naresh M. Punjabi, M.D.

Assistant Professor in the Department of Medicine in the School of Medicine.

Thomas C. Quinn, M.D., M.S.

Professor in the School of Medicine.

Ann Marie Rompalo, M.D., Sc.M.

Professor of Infectious Diseases, School of Medicine.

Neil Rosenshein, M.D.

Associate Professor in the School of Medicine.

Haya R. Rubin, M.D., Ph.D.

Professor in the Department of Medicine of the School of Medicine.

David A. Sack, M.D.

Professor of International Health. *International Health, cholera, rotavirus, diarrhea, Bangladesh, Gates Award, enterotoxigenic Escherichia coli, shigella, International Center, population, epidemiology, oral rehydration solution.*

R. Bradley Sack, M.D., Sc.D., M.S.

Professor in the Department of International Health. *International Health, infectious diarrheal diseases, enterotoxigenic Bacteroides fragilis, cholera, enterotoxigenic E. coli, epidemiology and ecology.*

Mathuram Santosham, M.D., M.P.H.

Professor in the Department of International Health. *Tobacco, International Health, Epidemiologic studies of enteric infections; improved oral rehydration therapy, field testing of vaccines, h. influenzae tybe b, pneumococcal, neonatal health.*

Oliver Schein, M.D., M.P.H.

Professor of Medicine, School of Medicine.

Brian Schwartz, M.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, biologic markers, cognitive functioning, gene-environment interaction, genetic susceptibility, headache, lead intoxication, Lyme disease, molecular epidemiology, neurobehavioral testing, occupational epidemiology, occupational safety and health, olfactory dysfunction, retrospective assessment of exposure, solvents, tetra ethyl lead, vector-borne disease.*

Ellen K. Silbergeld, Ph.D.

Professor in the Department of Environmental Health Sciences. *Environmental Health Sciences, antibiotic-resistant bacteria, lead, mercury, immunotoxicology, neurotoxicology, environment.*

Mark Steinhoff, M.D.

Professor of International Health. *Vaccine, immunization, pneumonia, surveillance, pneumococcus, pharyngitis, infectious respiratory disease.*

Xuguang (Grant) Tao, M.D., Ph.D., M.S.

Assistant Professor in the School of Medicine. *Environmental epidemiology, occupational epidemiology, air pollution, water pollution, cancer, cancer registry, GIS.*

David R. Thiemann, M.D.

Assistant Professor in the School of Medicine.

David L. Thomas, M.D., M.P.H.

Professor of Medicine, School of Medicine.

George Thomas, Ph.D.

Professor of Pediatrics, School of Medicine.

John R. Ticehurst, M.D.

Assistant Professor in the Department of Pathology in the School of Medicine and Director of the Clinical Laboratories at the Johns Hopkins Bayview Medical Center.

James Tielsch, Ph.D.

Professor of International Health. *International Health, epidemiology, blindness prevention, micronutrient malnutrition, developing countries, outcomes research.*

James Tonascia, Ph.D.

Professor of Biostatistics.

Timothy R. Townsend, M.D.

Associate Professor of Pediatrics, School of Medicine.

Bruce J. Trock, Ph.D., M.P.H.

Associate Professor in the Department of Urology in the School of Medicine.

Sheila West, Ph.D.

Professor of Ophthalmology, School of Medicine.

Lawrence S. Wissow, M.D., M.P.H.

Associate Professor of Health Policy and Management. *Health Policy and Management, primary care, mental health, children, physical punishment, suicide.*

Albert Wu, M.D., M.P.H.

Associate Professor. Health Policy and Management. *Health Policy and Management, quality of life, outcomes research, quality of care, medical error, HIV/AIDS, clinical trials, asthma, end-stage renal disease, intensive care.*

Robert H. Yolken, M.D.

Professor of Pediatrics, School of Medicine.

J. Hunter Young, M.D., M.H.S.

Assistant Professor in the Division of General Internal Medicine in the School of Medicine of Welch Center.

Scott Zeger, Ph.D.

Professor of Biostatistics.

Jonathan M. Zenilman, M.D.

Professor in the Department of Medicine of the School of Medicine.

Departmental Affiliates**Wasif M. Alum, M.D., M.S.P.H., M.B.B.S.**

Associate.

Carlos Antunes, Sc.D.

Associate.

Joan L. Aron, Ph.D.

Associate.

Joan E. Bailey-Wilson, Ph.D.

Adjunct Professor.

Alfred A. Buck, M.D., M.P.H., Dr.P.H.

Senior Associate. International health.

Olivia Carter-Pokras, Ph.D.

Associate.

Carlos Castillo-Salgado, M.D., J.D., Dr.P.H., M.P.H.

Adjunct Associate Professor.

Chien-Jen Chen, Sc.D.

Senior Associate.

Joseph Collins, Sc.D.

Senior Associate.

Adolfo Correa, M.D., Ph.D.

Adjunct Associate Professor.

Diane Dwyer, M.D.

Senior Associate.

Elizabeth A. Elliott, Sc.D.

Adjunct Assistant Professor

Charlotte Ferencz, M.D., M.P.H.

Senior Associate.

James P. G. Flynn, M.D., M.P.H.

Senior Associate.

Samuel R. Friedman, Ph.D., M.A.

Senior Associate.

Paul A. Gaist, Ph.D., M.P.H.

Adjunct Assistant Professor. *Applied epidemiology, public health, policy.*

Stephen J. Gange, Ph.D.

Adjunct Associate Professor. *Epidemiology, AIDS; Biomarkers; Biostatistics; Data Management or Analysis (Medical); Epidemiology; HIV; Infectious Diseases or Agents.*

Ethel S. Gilbert, Ph.D., M.P.H.

Senior Associate.

Adele K. Gilpin, Ph.D., J.D., M.A.

Adjunct Associate Professor. *Epidemiology.*

Neil M.H. Graham, M.B.B.S., M.D., M.P.H.

Senior Associate.

Linda Ahdieh Grant, Ph.D., M.P.H.

Associate.

Donald R. Hoover, Ph.D., M.P.H.

Senior Associate.

Michel Ibrahim, M.D., Ph.D.

Adjunct Professor. *Epidemiology, evidence, policy, clinical decisions, health service, public health, editor.*

Peter D. Inskip, Sc.D., M.S.

Associate.

Ebenezer Israel, M.D., M.P.H.

Senior Associate.

Jouni J.K. Jaakkola, M.D., D.Sc., Ph.D.

Adjunct Associate Professor.

Maritta S. Jaakkola, M.D., D.Sc.

Adjunct Assistant Professor.

Sun Ha Jee, Ph.D., M.P.H.

Adjunct Assistant Professor.

Ralph V. Katz, Ph.D., D.M.D., M.P.H.

Senior Associate.

Muin Khoury, M.D., Ph.D.

Associate.

Steven Kittner, M.D., M.P.H.

Lecturer.

Genell L. Knatterud, Ph.D.

Lecturer.

William Krol, Ph.D.

Senior Associate.

Charles E. Land, Ph.D., M.A.

Senior Associate.

Maria T. Landi, M.D., Ph.D.

Associate.

Ruey-Shiung Lin, M.D., Dr.P.H.

Senior Associate.

Martha S. Linet, M.D., M.P.H.

Senior Associate.

Anita M. Loughlin, Ph.D.

Associate.

Jay H. Lubin, Ph.D., M.A.

Senior Associate.

José M. Martín-Moreno, M.D, Ph.D., Dr.P.H., M.P.H.

Senior Associate.

Diane L. Matuszak, M.D., M.P.H.

Associate.

Francine E. McCutchan, Ph.D.

Adjunct Professor.

Joseph K. McLaughlin, Ph.D.

Adjunct Professor.

Suzana Alves de Moraes, M.D., Ph.D., M.P.H.

Associate.

James Mills, M.D.

Associate.

Paolo Miotti, M.D., M.P.H.

Associate.

David M. Morens, M.D.

Senior Associate.

Lechaim Naggan, M.D., Dr.P.H.,M.P.H.

Adjunct Professor.

Neal Nathanson, M.D.

Senior Associate.

F. Javier Nieto, M.D., Ph.D.

Adjunct Associate Professor.

Paolo Pasquini, M.D., M.P.H.

Lecturer.

Gloria M. Petersen, Ph.D., M.A.

Adjunct Professor.

Jeffrey Probstfield, M.D.

Senior Associate.

Myat Htoo Razak, M.D., Ph.D., M.P.H.

Associate.

Joann E. Rodgers, M.S.

Lecturer.

Elaine Ron, Ph.D., M.P.H.

Senior Associate.

Nathaniel Rothman, M.D., M.P.H.

Adjunct Professor.

Sharon Saydah, M.D., M.S.

Associate.

Margo Schwab, Ph.D.

Adjunct Assistant Professor. *Epidemiology*

A. Richey Sharrett, Ph.D.

Adjunct Professor. *Epidemiology;arteriosclerosis; ARIC.*

Thira Sirisanthana, M.D.

Adjunct Professor.

Jennifer S. Smith, Ph.D., M.P.H.

Associate. *Human papillomavirus, herpes simplex virus type-2, cervical cancer.*

Michael W. Smith, Ph.D.

Adjunct Professor.

Liza Solomon, Dr.P.H., M.H.S.

Associate.

Walter F. Stewart, Ph.D., M.P.H.

Adjunct Professor. *Epidemiology.*

Michael A. Stoto, Ph.D.

Senior Associate.

Charles Streckfus, D.D.S.

Lecturer.

Ubaldo Tamoufe, M.S.

Associate.

Stephen A. Tamplin, M.S.E.

Associate.

Poul Thorsen, M.D., Ph.D.

Associate.

David Wesley Vaughn, M.D., M.P.H., F.A.A.P.

Senior Associate.

David Vlahov, Ph.D., M.S.

Adjunct Professor.

Sophia S. Wang, Ph.D.

Associate.

Douglas Weed, M.D., Ph.D.

Associate.

Isaac B. Weisfuse, M.D., M.P.H.

Associate.

Paul K. Whelton, M.B.,B.Ch., B.A.O., M.Sc.

Adjunct Professor.

Laurie D. Wiggs, Ph.D., M.P.H.

Associate.

Gordon B. Willis, Ph.D., M.S.

Associate.

Alexander F. Wilson, Ph.D.

Adjunct Professor.

Robin K. Yabroff, Ph.D.

Adjunct Assistant Professor.

Epidemiology

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at <http://commprojects.jhsph.edu/courses/>

340.601 PRINCIPLES OF EPIDEMIOLOGY.

(5 units). First and summer terms. Gordis, Leon; Samet, Jonathan. Also offered off-campus, second term.

Introduces principles and methods of epidemiologic investigation of infectious and noninfectious diseases. Illustrates methods by which studies of the distribution and dynamic behavior of disease in a population can contribute to an understanding of etiologic factors, modes of transmission, and pathogenesis. Presents different types of study design, including randomized trials, case-control and cohort studies, risk estimation and causal inferences. Demonstrates the relationship between epidemiology and the development of policy. Laboratory problems provide experience in epidemiologic methods and inferences, illustrating a common-vehicle epidemic; the spread of infectious disease in school, home, and community; epidemiological aspects of a noninfectious disease; vaccination; the epidemiological approach to health services evaluation; rates of morbidity and mortality; sensitivity and specificity; and life table methods. No auditors permitted.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: 140.611, 140.621, 140.651, or former 140.601 (prior or concurrent), or equivalent.

340.602 INTERMEDIATE EPIDEMIOLOGY.

(6 units). Second term. Comstock, George; Guallar, Eliseo; Szklo, Moyses.

Illustrates concepts, methods, and strategies used in epidemiology studies, beyond the principles discussed in Epidemiology 340.601. Topics include basic study designs analysis of birth cohorts, measures of disease frequency and association, bias, confounding, effect modification, stratification and adjustment, quality control, and reporting of epidemiologic results. In the laboratory exercises, students work in small groups, further considering and discussing the topics and concepts covered in lectures. Each laboratory exercise is concluded with a plenary discussion.

Student evaluation: Students are evaluated by quizzes, a midterm, and a final exam.

Prerequisites: 340.601 or equivalent; either 140.612, 140.622, or 140.652 (prior or concurrent) or equivalent.

340.603 COHORT STUDIES: DESIGN, ANALYSIS AND APPLICATIONS. (4 units).

Third term. Cole, Stephen; Munoz, Alvaro.

Presents the conceptual basis of the design and practical aspects of conducting a cohort study, analytical approaches corresponding to different types of outcomes, and applications of cohort studies to epidemiologic research and public health. Discusses sources of errors in exposure assessment; bias; time-dependent exposures and confounders; sampling strategies for nesting case-control and case cohort studies; and sample size estimation for planning a cohort study.

Student evaluation: Student evaluation based on mid-term and final exams. Observation in lab sessions also used for informal evaluation.

Prerequisites: 340.601 and 340.602 or equivalent.

340.604 DESIGN AND APPLICATIONS OF CASE-CONTROL STUDIES. (5 units). Fourth term. Armenian, Haroutune; Seaberg, Eric C.

Reviews issues and theories underlying the design of case-control and other case-based methods in epidemiology and their applications, such as outbreak investigation, evaluation of screening and other interventions, etc. A case-control study is conducted by the students as part of the course and data for the student projects is provided through an interactive website.

Student evaluation: Student evaluation based on exams and on the design and analysis of a case-control study and a final publishable paper.

Prerequisites: 340.601-.602 and 140-621-.622 or equivalent.

340.606 META-ANALYSIS. (4 units). Third term. Goodman, Steven.

Presents basic methods in qualitative and quantitative meta-analysis, including formulating a hypothesis that can be addressed via meta-analysis, methods for searching the literature, abstracting information, and synthesizing the evidence. Quantitative methods include Bayesian and likelihood approaches to meta-analysis.

Student evaluation: Student evaluation based on problem sets and a meta-analysis project.

Prerequisites: 340.601, and 140.621-622 or former 140.602.

Consent of instructor required.

340.607 EPIDEMIOLOGIC AND PREVENTIVE ASPECTS OF CARDIOVASCULAR DISEASES. (4 units).

Third term. Coresh, Josef.

Discusses the epidemiology and prevention of cardiovascular disease, focusing on coronary heart disease, stroke, and end stage renal disease, emphasizing the interrelationships of biological and behavioral aspects. Focuses on established major modifiable risk factors for cardiovascular diseases, putative risk factors, and genetic susceptibility. Covers the social burden of disease and prevention strategies.

Student evaluation: Student evaluation based on class discussion, a mid-term take-home exam, and a final exam.

Prerequisites: 340.601, knowledge of clinical and pathological aspects of diseases covered.

340.608 OBSERVATIONAL

EPIDEMIOLOGY. (4 units). Second term. Gange, Stephen; Newschaffer, Craig. Also offered via the Internet, third term.

Expands upon material presented in Principles of Epidemiology (340.601) and provides opportunity to learn more about epidemiologic concepts as applied to cohort and case-control studies. Emphasizes interpretation and the ability to critically evaluate observational study designs and methods of data analysis. Intermediate concepts include measures of association, bias, confounding, and interaction/effect modification, and are illustrated in the context of analytic observational study designs.

Student evaluation: Student evaluation based on two problem sets and final examination.

Prerequisites: Introduction to Online Learning; 340.601 or 550.691-692; prior or concurrent enrollment in 140.612 or equivalent.

340.611 METHODOLOGIC ISSUES IN CANCER EPIDEMIOLOGY. (3 units). Second term. Helzlsouer, Kathy; Huang, Han-Yao.

Covers methodologic issues in the conduct of research in cancer etiology, prevention, and control. Topics include use of case-case study designs, clinical trials and alternative study designs for evaluating screening modalities, the use of intermediate markers, gene-environment interaction, and burden of proof for evidence-based screening and prevention policies.

Student evaluation: Student evaluation based on presentation, participation in discussion, and written exercises.

Prerequisites: 340.604, 340.624, 340.625.

Consent of instructor required.

340.612 EPIDEMIOLOGIC BASIS FOR TUBERCULOSIS CONTROL. (2 units). Third term. Chaisson, Richard; Coberly, Jacqueline.

Considers subjects and epidemiologic principles relevant to control measures against tuberculosis. Topics include source and interpretation of tuberculin sensitivity; risk factors; prevention by case-finding and treatment, vaccination, and chemoprophylaxis; and elements of control programs in developed and undeveloped areas. Presentation of assigned reading topics provides the basis for group discussions.

Student evaluation: Student evaluation based on participation in presentations and a final paper.

Consent of instructor required.

340.613 DESIGN AND CONDUCT OF CLINICAL TRIALS. (3 units). Fourth term.

Holbrook, Janet; Martin, Barbara.

Introduces issues in the design, organization, and operation of randomized controlled clinical trials, emphasizing long-term multicenter trials. Topics include ethical issues in trial design; concepts of controls, masking, and randomization; data collection; ongoing monitoring for evidence of adverse or beneficial treatment effects; organizational structure and data analysis principles.

Student evaluation: Student evaluation is based upon laboratories, assignments, and an examination.

Prerequisites: 340.601.

340.615 TOBACCO CONTROL: NATIONAL AND INTERNATIONAL APPROACHES. (2 units). Third term. Samet, Jonathan; Stillman,

Frances A. Jointly offered with the Department of Health Policy and Management and the Department of International Health.

Introduces tobacco control at the global level. Presents the health and economic burden of tobacco use worldwide and practical approaches to prevention, control, surveillance, and evaluation. Through lectures and problem-solving exercises, the course examines the interpretation and packaging of epidemiologic evidence for policy makers, the determinants of tobacco control, addiction, tobacco industry strategies, the legal foundation for regulation, national and international case studies in tobacco control, basic surveillance methods, evaluation of interventions, and transnational issues in tobacco control.

Student evaluation: Student evaluation based on a final paper.

340.616 EPIDEMIOLOGY OF AGING. (3 units). Fourth term. Chaves, Paulo; Fried, Linda P.

Addresses the rapidly increasing need for specialized knowledge among epidemiologists in order to effectively promote the health of the aging society in the US (in 2020, 20% of the US population will be 65 or older). Introduces the epidemiology of aging and age-related disorders, including overviews of the public health impact of an aging society and the demographics and biology of aging. Covers the descriptive and analytic epidemiology of prevalent chronic conditions in the aged, methodologic challenges essential to consider in research on older adults, and strategies for prevention of age-related disorders.

Student evaluation: Student evaluation based on a paper and on problem sets.

Prerequisites: 340.601, 340.602, and 140.621 or former 140.601 recommended.

340.618* OCCUPATIONAL

EPIDEMIOLOGY. (4 units). Fourth term.

Matanoski, Genevieve; Tao, Grant. Next offered 2005-2006.

Presents methods for the design and conduct of epidemiologic studies of occupationally related exposures and risks, and selected case studies.

Topics include cohort, case control, and cross-sectional studies; exposure assessment; exposure misclassification; and the value of surveillance strategies both in industry and within communities.

Student evaluation: Student evaluation based on lab exercises, group presentation of study critiques, and a final exam.

Prerequisites: 340.601, and 140.621 or former 140.601, or equivalent.

340.620 PRINCIPLES OF CLINICAL

EPIDEMIOLOGY. (2 units). Second term. Ford, Daniel; Erlinger, Thomas.

Discusses topics related to clinical epidemiology, including reliability and validity of clinical measurements, decision analysis, and principles of screening, and selected chapters from *Clinical Epidemiology: A Basic Science for Clinical Medicine*.

Student evaluation: Student evaluation based on class participation and a take-home final exam.

340.621 PRINCIPLES OF EPIDEMIOLOGY I.

(3 units). Offered off-campus only, first term.

Introduces principles and methods of epidemiologic investigation of infectious and noninfectious diseases. Illustrates methods by which studies of the distribution and dynamic behavior of disease in a population can contribute to an understanding of etiologic factors, modes of transmission, and pathogenesis. Presents different types of study design, including randomized trials, case-control and cohort studies, risk estimation and causal inferences. Demonstrates the relationship between epidemiology and the development of policy. Laboratory problems provide experience in epidemiologic methods and inferences, illustrating a common-vehicle epidemic; the spread of infectious disease in school, home, and community; epidemiological aspects of a noninfectious disease; vaccination; the epidemiological approach to health services evaluation; rates of morbidity and mortality; sensitivity and specificity; and life table methods. No auditors permitted.

Student evaluation: Method of student evaluation based on exams.

340.622 PRINCIPLES OF EPIDEMIOLOGY

II. (2 units). Offered off-campus only, second term.

Introduces principles and methods of epidemiologic investigation of infectious and noninfectious diseases. Illustrates methods by which studies of the distribution and dynamic behavior of disease in a population can contribute to an understanding of etiologic factors, modes of transmission, and pathogenesis. Presents different types of study design, including randomized trials, case-control and cohort studies, risk estimation and causal inferences. Demonstrates the relationship between epidemiology and the development of policy. Laboratory problems provide experience in epidemiologic methods and inferences, illustrating a common-vehicle epidemic; the spread of infectious disease in school, home, and community; epidemiological aspects of a noninfectious disease; vaccination; the epidemiological approach to health services evaluation; rates of morbidity and mortality; sensitivity and specificity; and life table methods. No auditors permitted.

Student evaluation: Method of student evaluation based on exams

340.623* EPIDEMIOLOGIC AND POLICY ASPECTS OF SELECTED CHILDHOOD DISEASES.

(2 units). Fourth term. Gordis, Leon. Not offered 2005-2006.

Covers selected topics in epidemiologic research related to the etiology, management, and prevention of childhood health problems.

Students read and critique papers in a journal club format. Involves critical review of methodologic and/or health policy issues such as birth defects, prevention of diarrhea, polio eradication, electromagnetic fields, asthma, perinatal mortality and race, and risk communication.

Student evaluation: Student evaluation based on class participation and a short critique of a published paper.

Prerequisites: 340.601 and 340.602.

Consent of instructor required.

340.624 ETIOLOGY, PREVENTION, AND

CONTROL OF CANCER I. (3 units). First term.

Alberg, Anthony; Helzlsouer, Kathy; Matanoski, Genevieve; Platz, Elizabeth; Tao, Grant; Visvanathan, Kala.

Emphasizes the role of epidemiology in cancer prevention and control. Compares and contrasts the descriptive epidemiology, natural history, and pathologic and biologic characteristics of selected common cancers, as well as factors related to their etiology. Describes specific resources available for cancer studies. Discusses the influence of environmental and genetic factors and their interplay on the development of cancer together with the epidemiologic issues involved in their investigation. Also covers principles and problems involved in cancer prevention and screening.

Student evaluation: Student evaluation based on discussions, debates, papers, and a written examination.

Prerequisites: 340.601 concurrent or previous.

340.625 ETIOLOGY, PREVENTION, AND

CONTROL OF CANCER II. (3 units). Second

term. Alberg, Anthony; Helzlsouer, Kathy; Matanoski, Genevieve; Platz, Elizabeth; Tao, Grant; Visvanathan, Kala.

Emphasizes the role of epidemiology in cancer prevention and control. Compares and contrasts the descriptive epidemiology, natural history, and pathologic and biologic characteristics of selected common cancers, as well as factors related to their etiology. Describes specific resources available for cancer studies. Discusses the influence of environmental and genetic factors and their interplay on the development of cancer together with the epidemiologic issues involved in their investigation. Also covers principles and problems involved in cancer prevention and screening.

Student evaluation: Student evaluation based on discussions, debates, papers, and a written examination.

Prerequisites: 340.601 concurrent or previous.

340.627 EPIDEMIOLOGY OF INFECTIOUS DISEASES. (3 units). Second term. Nelson, Kenrad.

Introduces the basic methods for infectious disease epidemiology and case studies of important disease syndromes and entities. Methods include definitions and nomenclature, outbreak investigations, disease surveillance, case-control studies, cohort studies, laboratory diagnosis, molecular epidemiology, dynamics of transmission, and assessment of vaccine field effectiveness. Case-studies focus on acute respiratory infections, diarrheal diseases, hepatitis, HIV, tuberculosis, sexually transmitted diseases, malaria, and other vector-borne diseases.

Student evaluation: Student evaluation based on a mid-term take-home exam and a final closed-book exam.

Prerequisites: 340.601, and 140.621 or former 140.601.

340.629 MEDICAL MYCOLOGY. (4 units).

Third term. Merz, William. Jointly offered with the School of Medicine.

Examines the comparative microbiology, clinical presentation, immunology, epidemiology, and therapy of mycotic infections of man. Laboratory sessions identify important fungal pathogens. Demonstrates newer diagnostic procedures, including immunologic and biochemical tests.

Student evaluation: Student evaluation based on class participation and exams.

Consent of instructor required.

340.630 FUNDAMENTALS OF GENETIC EPIDEMIOLOGY. (3 units). Second term. Fallin, Dani Margaret.

This course, the second in a four-quarter series, covers the necessary background to perform and understand the designs and statistical methods used in genetic epidemiology. Lectures focus on relevant theories in population genetics, risk models for genetic diseases, and statistical concepts used in human genetics. For each topic, applications are discussed in the context of the design options introduced in the first-quarter course, and as a prelude to the methodology to be taught in the final course.

Student evaluation: Student evaluation based on class participation, homework and a final exam.

Consent of instructor required.

340.631 METHODS IN GENETIC

EPIDEMIOLOGY I. (3 units). Third term. Beaty, Terri; Broman, Karl. Jointly offered with the Department of Biostatistics.

Lectures cover a broad range of methods used in genetic epidemiology, presenting both theory and their application. Selected articles from the scientific literature are reviewed and critically evaluated by the students in class and in written assignment. Computer lab exercises provide direct experience in analysis of real and/or simulated data sets. The series of topics covered includes measuring familial aggregation and correlation; detecting genes through segregation and linkage analysis; testing for gene-environment interaction; and incorporating genetic factors in epidemiologic study designs.

Student evaluation: Computer-based homework assignments and written critiques of relevant articles from the scientific literature.

Prerequisites: 140.621-622 or 140.651-652; 340.664.

Consent of instructor required.

340.632 METHODS IN GENETIC

EPIDEMIOLOGY II. (3 units). Fourth term. Beaty, Terri; Yao, Yin. Jointly offered with the Department of Biostatistics.

Lectures cover a broad range of methods used in genetic epidemiology, presenting both theory and their application. Selected articles from the scientific literature are reviewed and critically evaluated by the students in class and in written assignment. Computer lab exercises provide direct experience in analysis of real and/or simulated data sets. The series of topics covered includes measuring familial aggregation and correlation; detecting genes through segregation and linkage analysis; testing for gene-environment interaction; and incorporating genetic factors in epidemiologic study designs.

Student evaluation: Computer-based homework assignments and written critiques of relevant articles from the scientific literature.

Prerequisites: 340.631, 140.621-622 or 140.651-652; 340.664.

Consent of instructor required.

340.637* ENVIRONMENTAL

EPIDEMIOLOGY. (2 units). Third term. Matanoski, Genevieve; Tao, Grant. Not offered 2005-2006.

Describes and critiques the application of different study designs and methods of analysis used in assessing risks from environmental exposures, including cohort, case-control, panel, cross-sectional, time series, and ecologic studies. Discusses the use of epidemiology in setting exposure standards and the use of data on mortality, morbidity, and chronic versus acute conditions; the role of sensitive subgroups such as children, asthmatics, and pregnant women; problems with assigning exposures; classification error; and issues related to risk assessment. Discussion of methodologic issues includes studies on the primary air pollutants, water hardness, lead exposure, and hazardous dump sites.

Student evaluation: Student evaluation based on discussions and papers.

Prerequisites: 340.601, and 140.621 or former 140.601; or consent of instructor.

340.640 EYE DISEASE: EPIDEMIOLOGY AND CONTROL.

(1 unit). Second term. West, Sheila.

Lectures and small group discussions present the pathology, clinical manifestations, epidemiology, treatment, and control of the major blinding diseases, including cataract, glaucoma, onchocerciasis, trachoma, vitamin A deficiency, and age-related macular degeneration.

Student evaluation: Student evaluation based on class participation and a paper.

Prerequisites: 340.601, and 140.621 or former 140.601.

340.641 NOSOCOMIAL INFECTION. (4 units). Fourth term. Perl, Trish.

Introduces the history, descriptive epidemiology, surveillance methods, and economics of exploration of the most important factors influencing nosocomial infections, especially those in pediatric and adult services. Describes and analyzes methods for control of nosocomial infection, including primary and secondary interventions. Also discusses alternative interventions and parallels between contemporary and traditional approaches in developing countries.

Student evaluation: Student evaluation based on mid-term and final exams, and a paper.

340.642* HISTORY OF EPIDEMIOLOGY I: INFECTIOUS DISEASES. (2 units). First term. Marks, Harry. Next offered 2005-2006.

Examines the development of epidemiological methods and the links between epidemiology and public health based on readings of classical papers in epidemiology. Part 1 focuses on the history of infectious disease epidemiology.

Student evaluation: Papers and classroom participation.

340.643* HISTORY OF EPIDEMIOLOGY II: EPIDEMIOLOGY AND PUBLIC HEALTH.

(2 units). Second term. Marks, Harry. Next offered 2005-2006.

Examines social, behavioral, and environmental epidemiology through readings and discussions of original, seminal papers.

Student evaluation: Class participation and papers.

* Not offered every year as indicated.

340.646 EPIDEMIOLOGY AND PUBLIC HEALTH IMPACT OF HIV AND AIDS. (4

units). First term. Farzadegan, Homayoon. Also offered via the Internet, second term.

Provides an overview of the historical and public health aspects of the HIV/AIDS epidemic, with review and analysis of virology; immunology; clinical and laboratory manifestations; legal and ethical issues; economic impact; and needs for future research and intervention for global control of the HIV epidemic.

Student evaluation: Student evaluation based on class participation and exams.

Prerequisites: Introduction to Online Learning.

340.651 EMERGING INFECTIONS. (2 units).

Fourth term. Nelson, Kenrad.

Presents, describes and analyzes the factors related to the emergence of infectious diseases, new and old, that have emerged as important public health problems, or which have the potential for major epidemic spread. Possible methods for the rapid recognition, prevention, and control are explained.

Student evaluation: Student evaluation based on a paper reviewing an emerging infection.

Prerequisites: 340.627.

340.652 FIELD IMPLEMENTATION OF EPIDEMIOLOGIC STUDY. (3 units). Fourth

term. Hill, Joel G.

Focuses on the project management of an epidemiologic research study for implementation in the field. Explains the process of strategic planning, leadership development, and team management as related to the implementation of a large, collaborative, population-based field study. Students develop a management model to support a research study and defend it in class. Involves a field trip to view ongoing research studies.

Prerequisites: 340.601.

340.653 EPIDEMIOLOGIC INFERENCE IN OUTBREAK INVESTIGATIONS. (2 units).

Fourth term. Taha, Taha.

Provides skills for examining data and deriving inferences from epidemics and outbreak investigations. Discusses some large and small outbreaks, mostly from the distant past. Also discusses steps in investigating an outbreak.

Student evaluation: Student evaluation is based on class participation, problem sets developed from real outbreaks and a final problem that involves investigating an outbreak.

Prerequisites: Students must have basic knowledge of infectious diseases. Knowledge of introductory epidemiology and biostatistics is essential.

Consent of instructor required.

340.654 EPIDEMIOLOGY AND NATURAL HISTORY OF HUMAN VIRAL

INFECTIONS. (6 units). Third term. Farzadegan, Homayoon; Shah, Keerti. Also offered via the Internet, first term. Jointly offered with the Department of Molecular Microbiology and Immunology.

Emphasizes biology, epidemiology, and pathogenesis of diseases caused by human viruses. Discusses virus interaction with host, diagnostic methodologies, immunization, and treatment of viral infections. Examines relationships between viral infections and oncogenesis such as hepatitis/liver cancer, HPV/cervical cancer, EBV/lymphoma, and HTLV/leukemia. Also covers biology and natural history of major viral families such as retroviruses, rabies, and others.

Student evaluation: Student evaluation based on an exam.

Prerequisites: Introduction to Online Learning.

340.655 METHODS IN CLINICAL

RESEARCH. (6 units). Summer term. Goodman, Steven; Guallar, Eliseo; Klag, Michael.

Provides an intensive two-week introduction to clinical research methods, emphasizing epidemiological, biostatistical, and computing methods. Hand-outs and homework exercises provided at each session.

Student evaluation: Student evaluation based on paired pre- and post-test of knowledge base.

Prerequisites: Students must preregister and prior submission of an abstract for a research project.

Consent of instructor required.

340.664 INTRODUCTION TO GENETIC EPIDEMIOLOGY. (4 units). First term. Kao, Wen Hong Linda. Former course number 340.614.

Reviews basic principles of Mendelian inheritance in humans and the fundamentals of gene actions, cytogenetics, biochemical genetics and population genetics. Introduces different study designs in genetic epidemiology for determining genetic basis of common disease.

Student evaluation: Student evaluation based on homework and exams.

Prerequisites: College-level biology or genetics.

340.669* STATISTICAL APPROACHES TO GENETICS OF CANCER. (3 units). Second term. Yao, Yin. Next offered 2005-2006.

Covers statistical methodology frequently applied to linkage and lineage disequilibrium. Including more novel approaches such as microarray analysis and genetic pathway analysis. Topics include segregation analysis, parametric and non-parametric linkage analysis, gene-environment interaction, case-control analysis, haplotype analysis, microarray analysis and pathway.

Student evaluation: Homework, written critiques of research papers, and final exam.

Prerequisites: 340.664, Intro. to Genetic Epidemiology.

Consent of instructor required.

340.675 DATA MINING AND ITS APPLICATIONS IN EPIDEMIOLOGY. (2 units). Winter institute. Departmental faculty.

Data mining is a dynamic and fast growing field at the interface of statistics and computer science. The emergence of massive datasets containing millions or even billions of observations provides primary impetus for the field. Such datasets arise; for instance, in large-scale epidemiologic and clinical studies. The analysis of data on this scale presents exciting new computational and statistical challenges. Provides a comprehensive introduction to data mining, and its applications in an applied fashion. Students completing the course will be able to understand when and why data mining is needed, and how to interpret the results from data mining. Introduces students to all basic and advanced approaches on data mining and several data mining programs.

Student evaluation: Class presentation.

Prerequisites: 340.601 Principles of Epidemiology 140.621 Statistical Methods in Biostatistics (or its equivalent).

Consent of instructor required.

340.705 ADVANCED SEMINAR IN SOCIAL EPIDEMIOLOGY. (3 units). Fourth term. Celentano, David; Glass, Thomas; O'Campo, Patricia. Former course number 340.865.

Offers doctoral students an opportunity to synthesize theories and methodologies from the social and behavioral sciences and epidemiology. Highlights current controversies and practices in the evolving field of social epidemiology. Topics include: (a) the role of theory in epidemiology, (b) fundamental causes and the problem of "distality", (c) how social factors affect the body, (d) modeling of social factors and health, and (e) area-based influences on health. Course is oriented toward research rather than practice.

Student evaluation: Writing assignments, paper, lab reports, class participation.

Prerequisites: 140.654 or 140.624, 340.602, and one graduate level course in social or behavioral sciences.

Consent of instructor required.

340.710 INFERENCEAL PROBLEMS IN EPIDEMIOLOGIC STUDIES AND CLINICAL TRIALS. (4 units). Third term.

Goodman, Steven.

Deals with the general problem of how to draw conclusions from data. Presents philosophical debates about inductive and deductive scientific reasoning and relates them to the problems of p-values and hypothesis testing. Emphasizes the use of Bayesian and likelihood methods to measure statistical evidence, to evaluate diagnostic and screening tests, and to deal with inferential problems that arise when there are multiple subgroups, frequent monitoring of data, or multiple sources or evidence.

Student evaluation: Student evaluation based on problem sets and an exam.

Prerequisites: 340.601, 340.602; 140.621-624, former 140.601-604, or 140.651-652.

Consent of instructor required.

340.715 PROBLEMS IN THE DESIGN OF EPIDEMIOLOGIC STUDIES. (6 units). Fourth term. Jacobson, Lisa.

Presents the methodologic and logistic problems involved in designing and conducting epidemiologic studies. Students participate in the preparation of a research protocol for a study in a human population. Offers an opportunity to critically evaluate the adequacy and scientific merit of research protocols, develop an appreciation of the ethical aspects of conducting research involving human subjects, and apply methods and principles learned in earlier (340.601 - 603) and current courses to specific epidemiologic problems.

Prerequisites: 340.601-603.

Consent of instructor required.

340.716 ECOSYSTEM CHANGE AND PUBLIC HEALTH. (2 units). Winter institute. Departmental faculty.

Raises awareness of changes to human health related to global ecosystem change. Topics covered are: the human dimensions of global ecosystem change; the linkages between ecology and the transmission of infectious diseases; the impacts of climate variability and change on air resources and water resources with consequences for public health; and the science/ policy interface and integrated assessment.

Student evaluation: Class participation, discussion and workgroup presentations, paper.

Prerequisites: 340.601 Principles of Epidemiology.

340.717 HEALTH SURVEY RESEARCH METHODS. (6 units). First term. Elliott, Elizabeth; Hill, Joel G. Jointly offered with the Department of Health Policy and Management.

Presents health survey design; selection of a probability sample from a geographically defined population; questionnaire construction; interviewing; coding procedures; analysis of survey data; and interpretation and presentation of results. Intended for advanced students.

Student evaluation: Student evaluation based on participation in all aspects of a field research project designated by the instructor, a brief report, and an exam.

Prerequisites: 340.601; 140.611, 140.621, 140.651 or former 140.601, or equivalent.

Consent of instructor required.

340.718 EPIDEMIOLOGIC METHODS IN HEALTH SERVICES. (2 units). Winter institute. Armenian, Haroutune.

Reviews epidemiologic methods with regard to their application to health services research and management. Includes a discussion of different methods illustrated with examples and case studies. Participants will also evaluate a healthcare problem of general concern from their own experiences and will write a short paper using an epidemiologic method to address it.

Student evaluation: Class participation, discussion and workgroup presentations, and paper.

Prerequisites: 340.601 Principles of Epidemiology or equivalent.

340.728 ADVANCED METHODS FOR DESIGN AND ANALYSIS OF COHORT STUDIES. (4 units). Third term. Cole, Stephen; Munoz, Alvaro.

Explores advanced methods useful for design and analysis of cohort studies. Emphasis placed on methods for evaluating research questions concerning longitudinal markers of intermediate outcomes to clinical events, combining prevalent and incident cohorts, and evaluating effectiveness of interventions. Methods are illustrated using cohort studies in infectious disease epidemiology from instructor's field experience.

Student evaluation: Student evaluation based on preparation of a report in the style of "methods and results" section of a paper - based on the analysis of a dataset distributed at the beginning of the course.

Prerequisites: 340.602, 140.602 or 140.622. Knowledge of statistical package. Prior or concurrent enrollment in 340.603.

340.730 ASSESSMENT OF CLINICAL CARDIOVASCULAR DISEASE. (2 units). Third term. Miller, Edgar R.

Familiarizes students with techniques used to detect and quantify the presence of clinical cardiovascular disease. Initially, students tour the hospital, medical records department, angiography, echocardiography, and vascular laboratories. Students as a group observe radiographic (CT and MRI) imaging of atherosclerosis and review gross and histological specimens of atherosclerosis in the pathology laboratory. In addition, each student makes direct observations of any one imaging technique including cardiac of carotid echocardiography, coronary of peripheral angiography, coronary calcium scores using EBCT or Helical CT, or clinical assessment of blood pressure and ankle/brachial index.

Student evaluation: Final paper and presentation.

Prerequisites: 340.601.

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

Students who wish to undertake epidemiologic studies under the supervision of a faculty member may register for theses with the approval of the instructor and the department. Programs are individually planned to provide experience in field investigations, laboratory studies, or a combination of the two, as well as reading and research in specific areas of epidemiologic interest. The introductory statement to the Department of Epidemiology lists the facilities that are available for the conduct of research by doctoral candidates, special students, and others.

340.800 MPH CAPSTONE EPIDEMIOLOGY. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

340.803 ADVANCED TOPICS IN CARDIOVASCULAR DISEASE EPIDEMIOLOGY. (2 units). Fourth term. Miller, Edgar R; Sharret, A Richey.

Provides a forum for in-depth discussion of current research on cardiovascular diseases etiology. Selected topics, to be chosen together by students and faculty, include the major factors predicting coronary heart disease and stroke. Students review literature and present to the class information on specific hypotheses and their biological plausibility, and evaluate the population-based evidence to support them.

Student evaluation: Student evaluation is based on class presentations and general class participation.

Consent of instructor required.

340.810 FIELD PLACEMENT EPIDEMIOLOGY. (variable units). First, second, third and fourth terms.

* Not offered every year as indicated.

340.820 THESIS RESEARCH

EPIDEMIOLOGY. (variable units). First, second, third and fourth terms.

340.830 POSTDOCTORAL RESEARCH

EPIDEMIOLOGY. (variable units). First, second, third and fourth terms.

340.840 SPECIAL STUDIES AND RESEARCH

EPIDEMIOLOGY. (variable units). First, second, third and fourth terms.

340.845 SS/R APPLIED ASPECTS OF

COHORT STUDIES. (4 units). First and third terms. Farzadegan, Homayoon.

Provides a learning experience for students to understand the details of operational aspects of infectious disease cohort studies at clinical, laboratory, and data management levels. By direct observation and active participation in clinical and laboratory activities of the ongoing large cohort studies at Infectious Disease Program, students will have hands- and eyes-on daily field activities in the clinic and in the labs that are required for successful implementations of these studies.

Student evaluation: Student participation and final exam.

340.851 PHASE INTERNSHIP. (variable units).

First, second, third, fourth and summer terms. Ibrahim, Michel.

Familiarizes students with public health practice settings and provides hands-on experience about research topics in practice. Students synthesize and integrate knowledge acquired in coursework and apply it to a practical issue. Field experiences, seminars, research projects, and a scientific paper form the basis for the course.

Student evaluation: participation, paper, and oral presentation

Prerequisites: 340.601.

Consent of instructor required.

340.863 DOCTORAL SEMINARS IN

EPIDEMIOLOGY. (3 units). First, second, third and fourth terms. Feinleib, Manning; Goodman, Steven.

Provides a forum in which the doctoral students present and discuss papers on topics relative to epidemiologic principles and practice. Proposed topics include issues in measurement, causal reasoning, confounding, and multilevel modeling. Faculty guides the selection of topics and readings, and facilitates active dialog among seminar participants.

Student evaluation: Student evaluation is based on a paper, presentations, and classroom discussion.

Prerequisites: 340.601-604 and department written comprehensive exam.

Consent of instructor required.

340.869* RESEARCH METHODS IN

SEXUALLY TRANSMITTED DISEASES. (2 units). Fourth term. Celentano, David; Gray, Ron; Zenilman, Jonathan. Not offered 2005-2006.

Advanced seminar in research methods used in STD research. Focuses on multidisciplinary approach to STD research, emphasizing techniques used in the field. Examples include survey research, use of biological markers, diagnostic tests, and qualitative research design.

Student evaluation: Student evaluation based on presentation of articles and a paper.

Prerequisites: Course is required for STD Grant Trainees.

* Not offered every year as indicated.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

**180.640 MOLECULAR EPIDEMIOLOGY
AND BIOMARKERS IN PUBLIC HEALTH.**
See Department of Environmental Health Sciences.

**188.670* TISSUE INJURY, INFLAMMATION,
AND REPAIR.** See Department of Environmental
Health Sciences.

**223.676* PUBLIC HEALTH
OPHTHALMOLOGY I.** See Department of
International Health.

**223.677* PUBLIC HEALTH
OPHTHALMOLOGY II.** See Department of
International Health.

**302.685 PSYCHOSOCIAL FACTORS IN
HEALTH AND ILLNESS.** See Department of
Health Policy and Management.

305.612 EPIDEMIOLOGY OF INJURIES. See
Department of Health Policy and Management.

**317.600 INTRODUCTION TO THE RISK
SCIENCES AND PUBLIC POLICY.** See
Department of Health Policy and Management.

**317.610 RISK POLICY, MANAGEMENT AND
COMMUNICATION.** See Department of Health
Policy and Management.

**317.612 QUANTITATIVE METHODS AND
CASE STUDIES IN RISK: EXPOSURE
ASSESSMENT.** See Department of Health Policy
and Management.

**317.613 QUANTITATIVE METHODS AND
CASE STUDIES IN RISK: DOSE RESPONSE.**
See Department of Health Policy and Management.

317.615 TOPICS IN RISK ASSESSMENT. See
Department of Health Policy and Management.

330.603 PSYCHIATRIC EPIDEMIOLOGY. See
Department of Mental Health.

390.671 DESIGN OF CLINICAL STUDIES.
See Clinical Investigation Courses.

**390.672 QUANTITATIVE ANALYSIS OF
CLINICAL DATA.** See Clinical Investigation
Courses.

**550.691 QUANTITATIVE METHODS IN
PUBLIC HEALTH I.** See Extradepartmental
Courses.

**550.692 QUANTITATIVE METHODS IN
PUBLIC HEALTH II.** See Extradepartmental
Courses.

**550.693 QUANTITATIVE METHODS IN
PUBLIC HEALTH III.** See Extradepartmental
Courses.

* Not offered every year as indicated.

Health Policy and Management

The Department of Health Policy and Management educates master's, doctoral, and postdoctoral students to assume leadership roles in management, education, research, and public policy. The department has a multidisciplinary faculty who teach and conduct research related to the promotion and maintenance of health; the prevention of injury, disease, and disability; and the organization, financing, and delivery of health care services.

The primary faculty come from many fields and disciplines, including behavioral and social sciences; biostatistics; economics; epidemiology; gerontology; health education; health communication; health finance; health law and ethics; health services research; medicine; nursing; operations research; organizational behavior and management sciences; political science; policy analysis; psychology; public policy; public health practice; and sociology. Many hold joint appointments in the Johns Hopkins Schools of Medicine, Nursing, Arts and Sciences, and Engineering. The faculty also contribute to Schoolwide programs, including the Master of Public Health program, the Preventive Medicine Residency Program, the Interdepartmental Health Communication Program, and the Interdepartmental Program in Gerontology. Research centers based in the Department of Health Policy and Management foster collaborative research throughout the University and other institutions in the Baltimore-Washington area. For more information, see the "School-affiliated Centers and Institutes" chapter. The department is also fortunate to have a distinguished part-time faculty, including leaders in policy, management, and public health. These faculty have appointments as adjunct professors, senior associates, and associates. They teach courses, serve as preceptors, and are available to guide students seeking career counseling. In addition, faculty from other Johns Hopkins schools have joint appointments in the department, reflecting their interest in teaching and serving as mentors to our students.

In December 2002, the Advisory Board of the Johns Hopkins Bloomberg School of Public Health accepted the recommendation of the Ad Hoc Committee on Behavior and Health that a new department be formed. The focus of this new department, while not totally defined, will include psychosocial, behavioral, cultural, and genetic influences on health. It is expected that faculty within the current Concentration in

Social and Behavioral Sciences in Health Policy and Management will form the core faculty members of this new department. The School will begin searching for a department chair during the 2004–05 academic year. Once a new chair has been identified and joins the School, a separation from the Department of Health Policy and Management will take place. At this time, a timetable for this activity has not been determined.

DEGREE PROGRAMS

Master of Health Science Programs

The Master of Health Science (MHS) programs provide students with specialized training in their chosen field, as well as general training in the field of public health. These programs, do not require written comprehensive exams or a master's thesis.

Health Education—The MHS program in Health Education prepares students for careers in health education and health promotion practice. The program consists of one year of academic course work and a six-month field placement.

The curriculum emphasizes health promotion, education, and communication strategies for working with individuals, organizations, and communities. Students acquire a solid academic background in behavioral science principles and theories. The program develops skills in program planning, implementation, and evaluation. The field placement provides students with an opportunity, under supervision, to apply knowledge and skills to health education practice. A certificate of competency in health communication may also be awarded upon the completion of additional courses in the Interdepartmental Program in Health Communication. Students should consult the departmental student handbook for course requirements.

Co-Directors: Ms. Lee Bone, Dr. Andrea Gielen, and Ms. Eileen M. McDonald.

Health Policy—The MHS program in Health Policy is designed for individuals seeking specialized academic training in health policy. It equips students with fundamental policy analysis skills and substantive knowledge of the health care system and key health policy issues. The curriculum is flexible enough to allow students to pursue coursework in their own health policy interest area.

The required curriculum provides students with a substantive understanding of U.S. health policy issues; knowledge of the processes by which public policy decisions are made; training in basic quantitative and analytic methods; and the skills needed to critically

assess and apply research findings to the development and analysis of health policy.

The interdisciplinary faculty is recognized nationally and internationally for its excellence in policy analysis, health services research, and teaching, and is actively involved in formulating and implementing health policy at federal, state, and municipal levels. Students have the opportunity to customize the curriculum to meet their personal and professional goals, and are expected to complete a nine-month field placement, consisting of full-time employment in a professional health policy setting.

Students should consult the departmental student handbook for course requirements.

Director: Dr. Thomas Oliver; Associate Director: Ms. Dana Sleicher.

Health Finance and Management—The full-time MHS program in Health Finance and Management prepares students for mid-level positions in health care management. Required and elective course work covers the conceptual and quantitative skills needed by managers of contemporary health care organizations. Upon successful completion of required course work, students will complete the program through one of several options, which may include but are not limited to, the following: an eleven-month paid field placement, a special project, or a case study. Assignment to one of these options is made at the discretion of the program and is based on criteria such as student qualifications and previous work experience. For the field placement option, a wide variety of field placement sites are available. Examples are: consulting firms, managed care organizations, ambulatory, acute and long-term care organizations, and pharmaceutical firms. Students work in settings that enable them to pursue specific interests.

The part-time MHS program in Health Finance and Management provides education in health finance and management to people who currently hold managerial positions in a health care setting and wish to continue in their jobs while pursuing graduate study. Applicants to the part-time program must provide a detailed description of their position as part of their application. Students have three years in which to complete the required course work. A 16-credit case study or project is mandatory. Students have up to two additional terms to complete this requirement.

The program is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA). Students should consult the departmental student handbook for course requirements.

Director: Mr. William Ward; Associate Director: Ms. Donna Shiloh.

Master of Science in Genetic Counseling

The Genetic Counseling Program is a joint effort of the Department of Health Policy and Management and the National Human Genome Research Institute at the National Institutes of Health (NIH). The program requires two and one-half years of full-time study leading to the Master of Science (ScM) degree. Course work is taken at Johns Hopkins in Baltimore, and the NIH in Bethesda, Maryland.

The curriculum consists of didactic course work in the areas of human genetics, genetic counseling, health education, communication, ethics, public policy, and research methodology. The program also requires a minimum of 400 contact hours of supervised clinical rotations in a variety of settings in the Baltimore-Washington area. Clinical rotations begin in the second term of the program and are required throughout. These rotations provide a critical opportunity for students to learn directly about genetic conditions and their impact on individuals and families, and introduce students to the breadth of services and variety of counselor responsibilities. Students are required to pass a written departmental comprehensive exam and complete a thesis project.

For additional information or a program brochure, contact Mary Ann Dunevan, 410-955-2315, mdunevan@jhsp.edu

Doctoral Programs

The Department of Health Policy and Management awards the Doctor of Philosophy (PhD) and the Doctor of Science (ScD). Doctoral students select one of the three concentrations within the department in which to focus their studies—social and behavioral sciences, health services research, or health and public policy.

Doctoral students are required to take the departmental core courses; in addition there are required or recommended courses within the chosen concentration. At the end of the first year, students are required to sit for the written qualifying exams, covering material from the first-year required courses. In the second year, students take courses in preparation for beginning research in the chosen specialization(s). Seminar courses are offered to inform students of the state of the art in research and to assist them in preparing a research thesis proposal. Generally, by September after the second year, students present themselves for the preliminary oral exams, in which faculty examine students' readiness to begin research. Upon passing, students pursue a research topic leading to a written dissertation acceptable to their advisor and a committee of faculty on the final oral exams. It should be possi-

ble to complete the doctoral degree in four years of full-time study.

Concentration in Social and Behavioral Sciences

Associate Chair: Dr. Margaret Ensminger.

The educational objective of the Social and Behavioral Sciences concentration is the training of students for careers as social and behavioral scientists and health educators in the public health arena. Rigorous training in research methods and program evaluation is a principal strength. The focus is on understanding and influencing health behaviors that are risk factors in disease and illness, and on behaviors that can be considered protective and health enhancing. Emphasis is placed on the application of behavioral and social science perspectives to research into contemporary public health problems. Students are required to participate in ongoing research supervised by faculty. Students should consult the departmental student handbook for course requirements.

Specialization in Social and Psychological Influences on Health—This specialization focuses on social and psychological factors and processes in the etiology and prevalence of disease, in health care-seeking behavior, disease prevention, long-term care, and rehabilitation. Students are exposed to current research on health knowledge, attitudes, and beliefs; social and psychological factors in disease etiology; risk reduction; and cultural influences in public health, including crosscultural studies.

The curriculum emphasizes sociological and psychological conceptualizations of health and illness, and theories of stress and coping, as well as the special problems in the design and measurement of social and psychological variables. Emphasis is placed on the interactive and independent roles of psychosocial factors for disease, with a focus on the social context in which illness is defined and treated. The influence of major social structural divisions such as gender, socioeconomic status, and ethnicity is highlighted. The basic structure and function of health care systems of societies are also considered in their social-political context.
Faculty: Drs. Brenner, Curbow, Ensminger, Knowelton Klassen, and Latkin.

Specialization in Health Education and Communication—This specialization focuses on the application of principles from educational, behavioral, social, and psychological theory to influence health practices and behaviors conducive to optimal health in individuals, groups, and communities. Students are exposed to current research on health education and communication, with a particular focus on ecological models of health, evaluating multifaceted intervention

programs, and patient provider communication.

The curriculum emphasizes needs assessment, planning, implementation, and evaluation of comprehensive health promotion programs. Specific intervention strategies covered include individual behavior change strategies based on learning theory, use of mass media communication, interpersonal communication, social support, advocacy, and community organizing. Program implementation issues such as administrative and staff development and support are also considered. Interventions studied include those directed at patients, health care professionals, administrators, legislators, the general public, or combinations of the above.

Faculty: Drs. Bowie, Curbow, Gielen, Kincaid, Rimal, Roter, Smith, Wissow, Ms. Bone, and Ms. McDonald.

Concentration in Health Services Research

Associate Chair: Dr. Judith Kasper.

Health services research is a multidisciplinary field of inquiry, both basic and applied, that examines the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services to increase knowledge and understanding of the structure, processes, and effects of health services for individuals and populations. Its goal is to provide new knowledge, theories, and methods on which to base short- and long-range plans and policies for meeting the health needs of the population in a cost-effective way.

Health services research is an integrative activity that draws upon the knowledge and methods from a wide range of disciplines, including the behavioral and social sciences, biostatistics, epidemiology, health economics, health education, and operations research. The health services research curriculum trains students to carry out research dependent on multidisciplinary skills, and requires interdivisional and interdepartmental collaboration. Students should consult the departmental student handbook for course requirements.

Specialization in Health Economics—The concepts and methods of economic analysis currently are used to study resource allocation questions throughout the entire health sector. These questions range from “micro” studies of managerial efficiency within producing units to “macro” policy analyses of major changes in arrangements for financing health services. The curriculum in health economics prepares doctoral students to understand the application of economic analysis to the health field and to carry out original studies in health economics.

The curriculum stresses a solid grounding in modern economic theory, quantitative methods, and

econometrics, and offers a broad exposure to economic studies in the health field. It provides for students a working knowledge of basic public health statistics and methods, and familiarity with health policy, management, and research issues. This base of public health knowledge enables the student to appreciate the variety of disciplinary perspectives and institutional concerns that are relevant to the analysis of resource allocation questions within the health field. Many electives are available and are selected with the guidance of the student's advisor. Students also are encouraged to undertake individual studies under the guidance of a faculty member.

Faculty: Drs. Frick, Gaskin, and Salkever.

Specialization in Health Services and Outcomes Research—In a changing health care delivery system, health services researchers increasingly are concerned with the effects of different models of organizing and financing health care on the outcomes of care for individuals and populations. Outcomes may include such factors as client satisfaction, functional status, health-related quality of life, excess morbidity, and mortality. Outcomes may also be used to construct performance indicators for hospitals, health plans, and other organizations for use by consumers, managers, payers, and policy makers. In this doctoral specialization, students acquire the conceptual and methodological tools needed to conduct research and program evaluation to advance the state of knowledge of these issues. The curriculum emphasizes the following areas: understanding variations in the organization and financing of health care delivery; methodologies for measuring and predicting quality of care and health outcomes; assessing the impact of technology and treatments on patient outcomes; and assessing the impact of health care policy on individuals and populations.

Approaches employing primary data, secondary data, and integrated data sources are included to expand students' skills. The specialization prepares students for careers as health services researchers and as leaders of health care delivery organizations or programs in which the evaluation of quality of care and health outcomes is of central interest.

Faculty: Drs. Anderson, Dy, Forrest, Kasper, LaVeist, MacKenzie, Morlock, Riley, Steinwachs, Weiner, Wu, and Ms. Shiloh and Mr. Ward.

Specialization in Gerontology and Long-term Care—In response to the shifting demographic and epidemiologic nature of the population, aging issues and programs have been identified as an essential focus of public health. The specialization in this area integrates gerontologic content into health policy in general and health services research in particular. The required course work is based on the broad range of public health

knowledge and skills intended to prepare students for leadership positions in agencies and institutions charged with administering services as well as to conduct research into the health and well being of the older population. Students learn the principles of health services research and apply them to the study of all aspects of health and health care of the aging population.

Faculty: Drs. Burton, Boulton, German, Kasper, and Wolff.

Concentration in Health and Public Policy

Associate Chair: Dr. Thomas Burke.

The doctoral program in Health and Public Policy is designed for individuals seeking to examine solutions to public health problems through the development of prevention strategies and a better understanding of how health policy is developed and implemented. In this concentration, public policy is viewed in its broadest sense, to encompass social issues, law, ethics, politics and science. The effect of public policy on the health of populations and the ability to employ public policy to relieve the burdens of disease and injury are a focus. The concentration encompasses a broad spectrum of activities related to the design and evaluation of interventions and policies for the prevention of injury and disease, to the delivery of these interventions and policies through advocacy.

Specialization in Bioethics and Health Policy—This specialization is designed for students who want bioethics to be the distinguishing characteristic of their career in public health. Students complete the departmental core courses, but are also required to complete course work in bioethics, moral philosophy and public health law. Course requirements are completed through the department of Philosophy at the University and the Kennedy Institute of Ethics at Georgetown University in addition to the School of Public Health. Doctoral research conducted by students focuses on analyzing empirical information about specific areas of public health or health policy and examining the ethical implications of their finding.

Faculty: Drs. Faden, Gamble, Kass, and Taylor; Profs. Gostin and Teret; and Mr. Vernick

Specialization in Environmental and Occupational Health Policy—Factors in the human environment which affect health require a multidisciplinary approach for evaluation. This specialization integrates courses from the departments of Epidemiology, Environmental Health Sciences and Health Policy and Management to provide a foundation for the application of science to occupational and environmental policy. The specialization emphasizes evaluation, development and refinement of policies at local, state, federal and international levels.

Faculty: Prof. Baker; Drs. Burke, Ettinger, Sorock and Silbergeld; Ms. Resnick

Specialization in Health Care/Health and Social Policy—This area of specialization focuses on the analysis and comprehension of the patterns of organization, funding, and delivery of health care in the United States and other developed countries. The impact that social policies have on the level of health and well-being of populations is a focus as is the relationship between health care and social care, patterns of productivity, consumption, utilization of health services, and satisfaction with health services are also examined.

Faculty: Drs. Navarro, Oliver, Shi and Starfield.

Specialization in Injury Control—The science and policy of preventing injuries, reducing disability therefrom, and providing emergency services and rehabilitation is studies in this area of specialization. In conjunction with the Center for Injury Research and Policy, the faculty and students focus on injuries of all types, including highway injuries, falls, burns, drowning and violence. The epidemiology of these injuries is determined, and strategies to prevent the injuries are formulated and evaluated.

Faculty: Profs Baker and Teret; Drs. Frattaroli, Fowler, Sorak, Webster; Mr. Vernick

Specialization in the Practice of Prevention—This area of specialization examines specific public health problems such as AIDS, injuries, tobacco, and violence, and studies the social, economic, political, and legal forces that constitute obstacles for the resolution of these health problems. Strategies for addressing these problems through traditional and innovative policies are developed and evaluated.

Faculty: Professors Baker and Teret, Drs. Farfel, Kass, Li, Taylor, and Webster.

Health Policy and Management

Faculty data as of April 1, 2004. For current listing, please click here: <http://faculty.jhsph.edu/hpm.cfm>

Donald M. Steinwachs, Ph.D.
Chair of the Department.

Thomas Burke, Ph.D.
Associate Chair.

Margaret E. Ensminger, Ph.D.
Associate Chair.

Judith Kasper, Ph.D.
Associate Chair.

Primary Faculty

Gerard F. Anderson, Ph.D.
Professor. *Health Policy and Management, Health Care Finance, Chronic Disease, Graduate Medical Education, Hospitals, Academic Medical Centers, Technology Assessment.*

Susan P. Baker, M.P.H.
Professor. *Injury, teen drivers, alcohol, aviation safety, injury severity, occupational safety.*

David P. Bodycombe, Sc.D., M.Sc.
Assistant Scientist.

Lee R. Bone, R.N., M.P.H.
Associate Public Health Professor. *Community-based health promotion programs, evaluation sustainability, health education, health policy and management.*

Charles E. Boulton, M.D., M.P.H., M.B.A.
Professor. *Health Policy and Management, Health services research, geriatrics, post-acute care, outcomes research, interdisciplinary care.*

Janice V. Bowie, Ph.D., M.P.H.
Assistant Professor. *Minority health, Health disparities, Cancer prevention, Cancer control, Spirituality, Women's health, Community health, Urban health.*

M. Harvey Brenner, Ph.D.
Professor.

Margaret Bright, Ph.D.
Professor Emerita.

Thomas A. Burke, Ph.D., M.P.H.
Professor. *Environmental health policy; risk assessment and communication; environmental epidemiology; health policy and management.*

Lynda C. Burton, Sc.D.
Associate Research Professor. *Health Policy and Management, aged, managed care, nursing home, dementia.*

Arthur Bushel, D.D.S., M.P.H.
Professor Emeritus.

Richard L. Cain, M.S.
Research Associate.

Renan C. Castillo, M.S.
Assistant Scientist. *Trauma Outcomes Pain Structural Equation Modeling Disparities Cognitive Behavioral Therapy Self Management Interventions.*

Li-Hui Chen, Ph.D., M.S.
Assistant Scientist. *Motor vehicles, teenage drivers, graduated licensing, alcohol, injury.*

Sharon L. Cullinane, R.N., B.S.N., M.H.S.
Research Associate.

Barbara Curbow, Ph.D.
Associate Professor. *Health Policy and Management, psychosocial oncology, quality-of-life, decision making, breast cancer, psychological stress, occupational stress, child care, child care workers, risk communication, health behavior, attitudes and behavior, attitude change.*

Liza Dawson, Ph.D.
Research Associate.

Sydney Morss Dy, MD, M.Sc.
Assistant Professor. *Palliative care, quality of care, end-of-life care, hospital care, technology assessment, terminally ill, cancer, patient-physician communication, medical decision-making, Health Policy and Management, quality improvement, internal medicine, access to care, oncology.*

Margaret E. Ensminger, Ph.D.
Professor. *Health Policy and Management, Behavior and Health, life span development and health; childhood and adolescence; social structure and health; substance use; aggressive and violent behavior.*

Patti L. Ephraim, M.P.H.
Research Associate. *Amputation, congenital limb deficiency, outcomes.*

Adrienne S. Ettinger, Sc.D., M.P.H.
Assistant Professor. *Environmental epidemiology, pediatric and perinatal epidemiology, children's environmental health, biomonitoring, lead poisoning prevention, health policy, tracking, surveillance, public health practice.*

Ruth Faden, Ph.D., M.P.H.

Professor. *Health Policy and Management, bioethics and public policy; ethics and cellular engineering; ethics and bioterrorism; ethics, genetics and public policy; research ethics; justice.*

T. Maureen Fahey, M.L.A.

Research Associate. *Health Policy and Management.*

Mark Farfel, Sc.D.

Associate Professor. *Community health, urban health, community-based research, lead poisoning, prevention, children.*

Charles D. Flagle, Dr.Eng.

Professor Emeritus.

Christopher Forrest, Ph.D., M.D.

Associate Professor. *Child and adolescent health; child health policy; primary care; population-based healthcare; health services research; outcomes research.*

Carolyn Fowler, Ph.D., M.P.H.

Assistant Public Health Professor. *Injury Prevention; Public Health Training; Workforce Development; Community Programs; Capacity; Evaluation; Child Death Review; Child Passenger Safety; Local Health Departments.*

Shannon Frattaroli, Ph.D., M.P.H.

Assistant Scientist. *Health Policy and Management, gun policy, domestic violence, violence prevention, injury prevention, qualitative research methods, public health advocacy, community-based public health research, prevention policy.*

Katherine Parris Frey, M.P.H.

Research Associate. *Trauma Care, EMS.*

Kevin D. Frick, Ph.D., M.A.

Associate Professor. *Health Policy and Management; cost effectiveness; community interventions; prevention; ophthalmology; nursing.*

Vanessa Northington Gamble, M.D., Ph.D.

Associate Professor. *Health Policy, Minority Health, Health Disparities, History of Public Health and Medicine, Bioethics, Cultural Competence, Reproductive Health; Tuskegee Syphilis Study.*

Darrell J. Gaskin, Ph.D.

Associate Professor. *Health Disparities, Minority Health, Safety Net Hospitals, Access to Care, Mental Health Economics, Managed Care.*

Pearl German, Sc.D.

Professor Emerita. *Health Policy and Management, Center on Aging and Health, Gerontological.*

Michael Christopher Gibbons, M.D., M.P.H.

Assistant Public Health Professor. *Minorities, Cancer, Disparities, Interventions, Community Health Workers, Underserved, Strategic Management.*

Andrea C. Gielen, Sc.D., Sc.M.

Professor. *Health Policy and Management, Behavioral Studies, Behavior and Health, Intervention Research, Injury Prevention, Health Education, Child/Maternal Health, Health Promotion, HIV/AIDS, Women's Health, Domestic Violence.*

Alice Gifford

Associate Professor Emerita.

Lawrence Gostin, J.D.

Professor.

Donald A. Henderson, M.D., M.P.H.

University Distinguished Service Professor. *Surveillance, smallpox, eradication, biodefense, biological weapons, bioweapons, bioterrorism, anthrax, polio, influenza.*

Robert J. Herbert, B.S.

Research Associate.

James G. Hodge, Jr., J.D., LL.M.

Assistant Public Health Professor. *Law, public health, bioethics, privacy, genetics, federalism, vaccination, tobacco, model laws.*

Judith L. Holzer, M.B.A.

Instructor. *Health policy and management.*

Wenke Hwang, Ph.D.

Assistant Scientist. *Payment System, Medicare, Medicaid, Claims Data, Cost, Access to care, Outcomes.*

Hee-Soon Juon, Ph.D.

Assistant Research Professor. *Health Policy and Management; Social and Behavioral Sciences; cancer control behavior; substance use; criminal behavior; minority mental health; cigarette smoking; suicidal behavior; Korean American.*

Judith Kasper, Ph.D.

Professor. *Health Policy and Management, disability, long-term care, aging, dementia, access to care, survey research.*

Nancy Kass, Sc.D.

Professor. *HIV, ethics, bioethics, research ethics, international, women, genetics, AIDS, public health ethics, health policy.*

D. Lawrence Kincaid, Ph.D.

Associate Scientist.

Ann C. Klassen, Ph.D.

Associate Professor. *Cancer prevention and control, preventive screening, women's health, diet and health, HIV/AIDS, transplantation, organ procurement, minority health, access to care, GIS, spatial statistics, multilevel influences, geodemographics.*

Amy R. Knowlton, Sc.D.

Assistant Scientist. *Health Policy and Management, HIV/AIDS, social networks, prevention, urban health, social support, informal caregiving, drug users.*

Susan M. Larson, M.S.

Research Associate.

Carl Latkin, Ph.D., M.S.

Associate Professor. *Health Policy and Management, HIV, social networks, AIDS, prevention, drug users, urban health, needle exchange, overdose, social context.*

Thomas LaVeist, Ph.D.

Professor. *Health Policy, Management, Health Disparities, Health Inequality, Race, Ethnicity, socioeconomic status, Social Factors, culture, community health, minority health, medical sociology, Behavior and Health.*

Robert S. Lawrence, M.D.

Professor. *Health and Human Rights, Environmental impacts of industrial agriculture, Food Security.*

Ellen J. MacKenzie, Ph.D.

Professor. *Cost of Illness, Injury, Trauma, Trauma Systems, Casemix Measurement, Injury Severity Measures, Disability, Clinical Effectiveness, Outcomes Research.*

Julie S. Mair, J.D., M.P.H.

Assistant Scientist. *Health Policy and Management, violence prevention, environmental modifications, built environment, bioterrorism, firearms, guns, public health law, prisons.*

Eileen M. McDonald, M.S.

Assistant Scientist. *Health Policy and Management, Social and Behavioral Sciences, Health Education, Injury Control, Health Communication, Computer Tailored Messaging, Professional Preparation.*

Laura Morlock, Ph.D., M.A.

Professor. *Health Policy and Management, Health care management, Medical liability, Performance improvement, National health insurance, Taiwan, Risk management, Rural health care, Patient Safety, Health care organization, Health care quality.*

Vicente Navarro, M.D., D.M.S.A., Dr.P.H.

Professor. *Health Policy and Management, public policy, health policy, international health, sociology, policy studies.*

Thomas R. Oliver, Ph.D.

Associate Professor. *Health Policy and Management, health politics and policy, public policy making, health system reform, policy innovation, leadership, health care competition, managed care, Medicare, Medicaid, state health policy.*

Rodger Parker, Ph.D.

Professor Emeritus.

Beth A. Resnick, M.P.H.

Research Associate. *Environmental public health practice, environmental public health tracking, Health Policy and Management.*

William Richardson, Ph.D.

Professor Emeritus.

Anne W. Riley, Ph.D.

Associate Professor. *Health Policy and Management, child, adolescents, mental health, health services research, health status, measurement, methods.*

Rajiv N. Rimal, Ph.D.

Assistant Professor. *Risk communication; health communication; health promotion; doctor-patient communication; normative influences; health message design; new technology in health promotion.*

Judith A. Robertson, B.S.

Research Associate.

Debra Roter, Dr.P.H.

Professor. *Health Policy and Management, Doctor-Patient Communication, Roter Interaction Analysis System (RIAS), Physician training, Patient activation, Patient compliance.*

David S. Salkever, Ph.D.

Professor. *Health Policy and Management, Economic impacts, econometric models, mental health disability benefits, mental health insurance.*

Jason W. Sapsin, J.D., B.A.

Assistant Scientist. *Infectious disease; law; policy; preparedness; bioterrorism; trade; international; environmental; regulation; administrative; vaccine; practice.*

Edyth H. Schoenrich, M.D., M.P.H.

Professor. *Public health administration; program planning; services to the chronically ill and aging; health policy and management.*

Anna Scholl, M.S.

Assistant Professor Emerita.

Leiyu Shi, Dr.P.H., M.B.A., M.P.A.

Associate Professor. *Health Policy and Management, primary care, vulnerable populations, community health centers.*

Donna Shiloh, M.S.

Instructor. *Health Policy and Management.*

Andrew D. Shore, Ph.D.

Research Associate.

Elizabeth Ann Skinner, M.S.W.

Associate Scientist. *Mental health services research, survey research methods, patient-reported outcomes assessment methods.*

Eric P. Slade, Ph.D.

Assistant Professor. *Health Policy and Management, Children's mental health services, children's mental health, parenting, schizophrenia, mental health care.*

Dana Sleicher, M.P.H., M.A.

Instructor. *Health Policy and Management.*

Katherine Clegg Smith, Ph.D.

Assistant Professor. *Tobacco, media, media advocacy, textual analysis qualitative methods, youth health behavior, agenda setting.*

Gary S. Sorock, Ph.D.

Associate Professor. *Occupational injury, geriatric injury, injury methods.*

Jason M.M. Spangler, M.D.

Instructor.

Barbara Starfield, M.D., M.P.H.

University Distinguished Service Professor. *Primary care; specialty care; coordination of care; equity in health; effectiveness of health services; health status assessment; co-morbidity; case-mix; child health services research; health policy; health professional policy; primary care policy; international health services.*

Donald M. Steinwachs, Ph.D.

Professor. *Health Policy and Management, Medical effectiveness, patient outcomes, dicators of outcome, integration of outcomes management systems, managed care, access to care, ambulatory care groups, effectiveness of systems of care, quality profiling, routine management information systems (MIS).*

Holly A. Taylor, Ph.D., M.P.H.

Assistant Research Professor. *Health Policy and Management, human subject research; research ethics; local implementation of national policy; HIV/AIDS policy; civilian biodefense policy; qualitative research methods.*

Sandra D. Teitelbaum, M.L.S., M.A.T.

Research Associate. *Trauma centers, trauma systems, injury, information management, disaster preparedness.*

Stephen P. Teret, J.D., M.P.H.

Professor. *Health Policy and Management, Law; violence; bioterrorism; injury, firearms, Behavior and Health.*

Michael E. Thompson, Dr.P.H., M.S.

Instructor. *Health services evaluation, health survey research, health professions accreditation, competency-based education, quality assurance systems.*

Lara B. Trifiletti, Ph.D., M.A.

Assistant Scientist. *Injury prevention, child injury, behavioral theory, Precaution Adoption Process Model, emergency department.*

Jon S. Vernick, J.D., M.P.H.

Associate Professor. *Health Policy and Management, Firearm Policy, Violence Prevention, Injury Control, Public Health Law, Motor Vehicles.*

William J. Ward Jr., M.B.A.

Associate Public Health Professor. *Health Policy and Management, financial management, management, leadership, cost accounting, financial accounting.*

Daniel Webster, Sc.D., M.P.H.

Associate Professor. *Violence, violence prevention, firearm injuries, gun policy, evaluation, domestic violence, youth violence.*

Jonathan P. Weiner, Dr.P.H.

Professor. *Health services research & evaluation, health policy, primary/ambulatory care, quality of care, managed care & health insurance, workforce planning, case-mix/risk adjustment, cross-national comparisons.*

Sharada Weir, Ph.D.

Assistant Scientist. *Health economics, Burden of Injury, Occupational Safety and Health, Construction.*

Lawrence Wissow, M.D., M.P.H.

Associate Professor. *Health Policy and Management, primary care, mental health, children, physical punishment, suicide.*

Jennifer L. Wolff, Ph.D.

Assistant Professor.

Albert Wu, M.D., M.P.H.

Associate Professor. *Health Policy and Management, quality of life, outcomes research, quality of care, medical error, HIV/AIDS, clinical trials, asthma, end-stage renal disease, intensive care.*

Diane E. Zerbe, M.H.S.

Research Associate.

Joint Appointments

Cheryl Alexander, Ph.D., M.P.H.

Professor of Population and Family Health Sciences. *Population and Family Health Sciences, adolescence; adolescent health; tobacco; behavioral sciences; survey research methods.*

Timothy Baker, M.D.

Professor of International Health. *International Health, Health planning, health sector workforce, disease burden to society, injury control, rehabilitation, India, Brazil, Indonesia, and Taiwan, Armenia, Ukraine, Thailand, Sri Lanka, Burma (Myanmar), Peru, Kuwait, Saudi Arabia, China, Pakistan, El Salvador, Nigeria, Ethiopia.*

Eric B. Bass, M.D., M.P.H.

Associate Professor of Medicine, School of Medicine.

Mary Catherine Beach, M.D., M.P.H.

Assistant Professor, School of Medicine.

Betty S. Black, Ph.D., Ed.S., M.Ed.

Assistant Professor, Department of Psychiatry and Behavioral Sciences, School of Medicine.

Cynthia M. Boyd, M.D., M.P.H.

Instructor, Division of Geriatric Medicine and Gerontology, School of Medicine. *Older people, comorbidity, hospitalization, disability, functional recovery, chronic disease care, quality of life.*

Gert Brieger, M.D., Ph.D.

Professor of History of Medicine, School of Medicine.

John R. Burton, M.D.

Mason F. Lord Professor, Department of Medicine, School of Medicine.

Jacqueline Campbell, Ph.D., M.S.N.

Anna D. Wolf Endowed Professor, School of Nursing.

David Celentano, Sc.D.

Professor of Epidemiology. *Epidemiology, international health, HIV, AIDS, STDs, behavior, Asia, AIDS prevention.*

Lisa Cooper, M.D., M.P.H.

Associate Professor of Medicine, School of Medicine. *Patient-centered care; patient attitudes; patient-physician communication; race; disparities; ethnic minorities, African Americans; depression; hypertension, primary care.*

Edward E. Cornwell, M.D., F.A.Sc., F.C.C.M.

Associate Professor, School of Medicine.

Gail Daumit, M.D., M.H.S.

Assistant Professor, School of Medicine.

Barbara deLateur, M.D.

Professor of Rehabilitation Medicine, School of Medicine.

Susan dosReis, Ph.D.

Assistant Professor, Department of Psychiatry and Behavioral Sciences, School of Medicine. *Health Policy and Management, pharmacoepidemiology, psychopharmacology, child mental health, health services research, mental health services research.*

Anne Duggan, Sc.D.

Associate Professor of Pediatrics, School of Medicine. *Health Policy and Management.*

Daniel E. Ford, M.D., M.P.H.

Professor of Medicine, School of Medicine.

Claude Earl Fox, M.D., M.P.H.

Public Health Professor, Department of Population and Family Health Sciences. *Population and Family Health Sciences, urban health.*

Linda P. Fried, M.D., M.P.H.

Professor of Medicine, School of Medicine. *Epidemiology, aging, frailty and disability, Center on Aging and Health, Clinical and Population-based Research on Aging, Women's Health and Aging, women's health, women and aging, frailty, Cardiovascular Health Study, Ginkgo Evaluation for Memory, Older Americans Independence Center, Experience Corps.*

Gail Geller, Sc.D., M.H.S.

Associate Professor of Pediatrics, School of Medicine.

Lynn R. Goldman, M.D., M.P.H.

Professor of Occupational and Environmental Health. *Environmental Health Sciences, environmental health policy, pediatric environmental health, children, infants, lead, methylmercury, pesticides, chemicals, environmental epidemiology.*

Toby Gordon, Sc.D.

Associate Professor of Surgery, School of Medicine.

Jane Halpern, M.D., Dr.P.H.,M.P.H.

Research Associate of Medicine, School of Medicine.

Martha Hill, Ph.D., M.S.N.

Professor, School of Nursing.

Neil Holtzman, M.D., M.P.H.

Professor Emeritus of Pediatrics, School of Medicine.

Douglas E. Hough, Ph.D.

Assistant Professor and Chair, Business Medical Programs, School of Professional Studies in Business and Education.

Geetha Jayaram, M.B.B.S., M.B.A.

Associate Professor in the Department of Psychiatry and Behavioral Sciences, School of Medicine.

Gabor Kelen, M.D.

Professor of Emergency Medicine, School of Medicine.

Michael Klag, M.D., M.P.H.

Professor, Department of Internal Medicine, School of Medicine.

Joan Kub, Ph.D., M.S.N.

Assistant Professor, School of Nursing.

Philip Leaf, Ph.D.

Professor of Mental Health. *Mental Health, Mental Hygiene.*

Bruce Leff, M.D.

Associate Professor of Medicine, School of Medicine.

Harold P. Lehmann, M.D., Ph.D.

Associate Professor. Pediatrics, School of Medicine.

David Levine, M.D., Sc.D., M.P.H.

Professor of Medicine, School of Medicine.

Guohua Li, M.D., Dr.P.H., M.P.H.

Professor of Emergency Medicine, School of Medicine.

Edward D. Miller Jr., M.D.

Professor and Chair of Anesthesiology, School of Medicine.

Sandra J. Newman, Ph.D., M.U.P.

Professor of Geography and Environmental Engineering, School of Engineering.

David E. Newman-Toker, M.D.

Assistant Professor, School of Medicine.

L. Reuven Pasternak, M.D., M.P.H., M.B.A.

Associate Professor of Anesthesiology and Critical Care Medicine, School of Medicine. *Health Policy and Management.*

Phyllis Piotrow, Ph.D.

Professor of Population and Family Health Sciences. *Population and Family Health Sciences, health communication.*

Neil Powe, M.D., M.P.H., M.B.A.

Professor of Epidemiology and Professor of Medicine, School of Medicine.

Peter J. Pronovost, M.D.

Associate Professor in Anesthesiology and Critical Care Medicine, School of Medicine.

Peter Rabins, M.D., M.P.H.

Professor of Psychiatry and Behavioral Sciences, School of Medicine.

William A. Reinke, Ph.D.

Professor of International Health. *International Health, health services research, program evaluation, decision analysis, quality assurance, survey methods, personnel management, functional analysis.*

Haya Rubin, M.D., Ph.D.

Professor of Medicine, School of Medicine.

Christopher Saudek, M.D.

Professor of Medicine, School of Medicine.

Ellen Silbergeld, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, antibiotic-resistant bacteria, lead, mercury, immunotoxicology, neurotoxicology, environment.*

David H. Stein, M.D., M.P.H.

Assistant Professor, School of Medicine.

Frances Stillman, Ed.D.

Associate Research Professor, Department of Epidemiology. *Tobacco, tobacco control, smoking, smoking cessation, policy research, evaluation, surveillance.*

Stephen T. Wegener, Ph.D.

Associate Professor. *Rehabilitation, self-management, psychology.*

Departmental Affiliates

Rhoda Abrams, M.B.A.

Associate. *Health Policy and Management.*

Sherilyn Z. Adams, M.P.H.

Associate.

John Ashworth III, M.H.A.

Associate.

Erik Matthew Augustson, Ph.D., M.P.H.

Associate.

Paul D. Bach, B.S.

Associate.

Bruce S. Behnke, M.H.A.

Associate. *Health Policy and Management.*

Nancy B. Beronja, M.S.

Associate.

Ashok Bhatkhande, M.B.B.S., D.P.H., M.D.

Associate. *Health Policy and Management.*

Ronald Bialek, M.P.P.

Associate.

Barbara B. Biesecker, M.S.

Adjunct Assistant Professor. *Health Policy and Management, Genetic Counseling.*

Leslie Biesecker, M.D.

Adjunct Associate Professor. *Malformations, mental retardation, gene mutation, polydactyly.*

Mark J. Bittle, M.B.A., C.H.E.

Associate. *Health Policy and Management.*

Jay Blackman, M.H.A.

Associate.

Gregg Bloche, M.D., J.D.

Adjunct Professor.

Carol Ann Bloomberg, M.B.A.

Associate.

Niranjani Bonner, M.D., M.P.H.

Associate.

Kirsty R. Boyd, M.Sc.

Associate.

Larry James Brant, Ph.D.

Adjunct Professor. *Biometry, Health Screening, Longitudinal Studies, Mathematical Modeling, Statistical Computing, and Statistical Consultation.*

Alison G. Brown, M.P.H.

Associate.

Patricia M.C. Brown, J.D., B.A.

Associate.

Shannon Cameron Brown, Ph.D., M.H.S.

Associate.

June M. Buckle, Sc.D., M.S.N.

Associate.

John J. Burke, J.D.

Associate.

Gregg P. Burleyson, M.H.S.

Associate.

Scott Burris, J.D.

Senior Associate. *HIV/AIDS, law, public health law.*

Carlos Castillo-Salgado, M.D., J.D., M.P.H., Dr.P.H.

Associate.

Linda B. Chamberlain, Ph.D., M.P.H.

Associate.

Ray-E Chang, Ph.D., M.B.A.

Associate.

Roger Chaufournier, M.H.S.A.

Associate.

C. Patrick Chaulk, M.D., M.P.H.

Associate.

Su-Chiu Chen, Ph.D.

Associate.

Tom Christoffel, J.D.

Senior Associate. *Health Policy and Management.*

Juan Clos, M.D.

Associate.

John Comings, Ed.D., M.Ed.

Associate.

Wayne Copes, Ph.D.

Associate.

Richard O. Davis, Ph.D.

Associate.

Susan DeFrancesco

Associate. *Health Policy and Management, injury prevention, prevention policy, health advocacy, community health.*

Gregory de Lissovoy, Ph.D., M.P.H.

Adjunct Associate Professor.

Sally Dixon, B.S.

Associate.

Robert Dodd, Sc.D.

Associate. *Aviation, injury prevention, transportation, occupational safety.*

James Doherty Jr., J.D.

Associate. *Health Policy and Management.*

Margaret Edmunds, Ph.D.

Adjunct Associate Professor. *Healthcare policy, Public health informatics, Risk communications, Biodefense-Bioterrorism, Emergency preparedness, Environmental health, Information security.*

John W. Ellis, C.P.A.

Associate. *Health Policy and Management.*

Elizabeth Fee, Ph.D.

Adjunct Professor.

Lois Ann Fingerhut, M.A.

Associate. *Health Policy and Management, Injury.*

Douglas Floccare, M.D., M.P.H.

Associate.

MaryAnn Fralic, R.N., Dr.P.H.

Adjunct Professor.

Richard Frank, Ph.D.

Senior Associate.

Mary P. Gabay, M.S.

Associate.

Paul A. Gaist, Ph.D., M.P.H.

Adjunct Associate Professor. *Applied epidemiology, public health, policy.*

Marilyn Hughes Gaston, M.D.

Senior Associate.

Norbert Goldfield, M.D.

Associate.

Warren Green, M.S.

Associate.

Daniel J. Gross, M.B.A.

Associate.

Ann-Michele Gundlach, Ed.D.

Associate. *Organizational Leadership, Strategic & Organizational Management, Organizational Change, Organizational Learning.*

Theodore C. Hanf, J.D., M.P.H.

Associate.

Herbert Hansen Jr., M.B.A.

Senior Associate. *Health Policy and Management.*

Robert G. Harmon, M.D., M.P.H.

Associate. *Health Policy and Management.*

Linda M. Harris, Ph.D.

Associate.

Mark W. Higdon, M.B.A., C.P.A., B.A.

Associate.

Ya-Seng (Arthur) Hsueh, Ph.D.

Associate.

Michael R. Huber, B.A., M.H.S.A.

Associate.

Julie Anne Hudman, Ph.D.

Associate.

Ronda G. Hughes, Ph.D., M.H.S., R.N.

Associate.

Sara C. Hull, Ph.D.

Adjunct Assistant Professor. *Bioethics, research ethics, genetic research, qualitative research.*

Mary N. Humphries, J.D.

Associate. *Health Policy and Management.*

Margarita P. Hurtado, Ph.D., M.H.S.

Associate.

Alan M. Ino, M.B.A.

Associate.

Jeffrey V. Johnson, Ph.D.

Associate.

Patrick F. Jordan, III, M.B.A.

Associate.

Vahé A. Kazandjian, Ph.D., M.P.H.

Adjunct Professor. *Health Policy and Management.*

Patricia A. King, J.D.

Adjunct Professor.

Linda T. Kohn, Ph.D., M.H.S.

Associate.

Thomas Kreamer

Associate.

Margaret Lamb, J.D.

Associate.

Marsha Lillie-Blanton, Dr.P.H., M.H.S.

Adjunct Assistant Professor.

Andrew E. Lincoln, Sc.D., M.S.

Adjunct Assistant Professor.

Margaret G. Lower, M.H.S.

Associate.

Jens Ludwig, Ph.D.

Associate. *Violence, gun, firearm, urban poverty.*

C. Alan Lyles, Sc.D., M.P.H.

Adjunct Associate Professor. *Health Policy and Management, Medication, Managed Care, Pharmacoeconomics, Pharmaceuticals, Drug Use Review (DUR), Formulary, Prepaid health care, Post Marketing Pharmaceutical Use.*

Trish Magyari, M.S.

Associate.

Parthiv J. Mahadevia, M.D.

Associate.

Faye E. Malitz, M.A.S.

Associate.

Joyce Mamon, Ph.D., M.S.

Adjunct Associate Professor.

Tami L. Mark, Ph.D., M.B.A.

Adjunct Assistant Professor.

José M. Martín-Moreno, M.D., Dr.P.H., Ph.D., M.P.H.

Senior Associate.

Andrew McGuire, B.S.

Associate.

Aideen McInerney, M.Sc.

Adjunct Assistant Professor.

Elizabeth McLoughlin, Sc.D.

Associate.

David P. McQuaid, C.H.E., M.B.A.

Associate.

Henry Miller, Ph.D., M.B.A., C.P.A.

Associate. *Reimbursement, APCs, DRGs.*

Patricia A. Milon, M.A.

Associate.

Michael N. Minear, B.B.A.

Associate. *Health Policy and Management.*

Michael E. Moreland, M.S.W.

Associate.

Dan K. Morhaim, M.D.

Associate.

John Morris, M.D.

Associate. *Health Policy and Management.*

Catherine J. Morrison, J.D.

Associate.

Marilyn S. Murphy, M.S.N., B.S.N.

Associate.

Patricia H. Neuman, Sc.D., M.H.S.

Associate.

Kevin C. Nolan, M.M.

Associate.

Lisa L. Ogorzalek, J.D., M.H.A., C.H.E.

Associate. *Health Policy and Management.*

Margaret O’Kane, M.H.S.

Associate.

Stephen Parente, Ph.D., M.P.H.

Adjunct Assistant Professor.

Dilys M. Parry, Ph.D.

Adjunct Associate Professor.

Pamela D. Paulk, M.S.W.

Associate.

Kathryn F. Peters, M.S.

Associate.

Hoangmai Pham, M.D., M.P.H.

Adjunct Assistant Professor. *Managed care; Medicare; quality of care; consumer information; physician behavior; chronic illness.*

Calvin M. Pierson, M.A.

Senior Associate.

Phaye Poliakoff-Chen, M.F.A., B.A.

Associate.

Judy Reitz, Sc.D., M.S.N.

Associate.

Charles B. Reuland, M.H.S.

Associate.

Leon Robertson, Ph.D.

Senior Associate.

Joseph V. Rodricks, Ph.D., M.S.

Adjunct Professor.

James E. Ross, M.B.A., F.A.C.H.E.

Associate.

Diane Rowland, Sc.D., M.P.A.

Adjunct Associate Professor.

William J. Sacco, Ph.D.

Associate.

Barbara Sattler, Dr.P.H., R.N.

Associate.

Gregory F. Schaffer, M.S.

Associate.

Carl Schramm, Ph.D., J.D.

Associate.

Maria Segui-Gomez, M.D., M.P.H., M.Sc., Sc.D.

Adjunct Associate Professor. *Health Policy and Management, effectiveness, cost-effectiveness, motor vehicle safety, program evaluation, injury prevention, outcomes measures.*

Dennis Shanahan, M.D., M.P.H.

Associate. *Health Policy and Management.*

Mona Shediach-Rizkallah, Ph.D.

Adjunct Assistant Professor.

Gordon S. Smith, M.B., Ch.B., M.P.H.

Adjunct Associate Professor.

Norma Smith, Ph.D.

Associate.

Carl A. Soderstrom, M.D.

Associate.

Edward J. Speedling, Ph.D., M.A.

Associate. *Health Policy and Management.*

Marc Spindelman, J.D.

Associate.

Joan Stine, M.H.S.

Associate.

Lawrence F. Strassner, III, R.N., M.S.

Associate.

Syi Su, Sc.D., M.P.H.

Associate.

Gary J. Strong, M.B.A.

Associate.

Kim D. Sydnor, Ph.D.

Associate.

Su Syi, Sc.D., M.P.H.

Associate.

Wanita D. Tesar, P.H.B.

Associate.

Richard C. Thomas, M.B.A.

Associate.

Russel K. Tolman, M.B.A., F.A.C.H.E.

Associate.

**Dalton A. Tong, M.B.A., C.P.A., F.H.F.M.A.,
F.A.C.H.E.**

Senior Associate.

Nga Lien Tran, Dr.P.H., M.P.H., M.B.A., C.I.H.

Adjunct Assistant Professor.

Pierre Vigilance, M.D., M.P.H.

Associate.

Leslie G. Waldman, Sc.M.

Associate.

James L. Weeks, Sc.D.

Associate.

Joshua M. Wiener, Ph.D., M.A.

Associate. *Health Policy and Management.*

Kenneth P. Wilczek, M.B.A., B.A.

Associate.

Paul Willging, Ph.D.

Senior Associate. *Health Care Management, Long-Term Care, Nursing Facilities, Assisted Living, Congregate Care, CCRCs.*

Renate Wilson, Ph.D.

Adjunct Associate Professor. *Health Policy and Management, National data bases; health insurance and expenditure studies; history of philanthropy and its impact on public health and health care; cross-national studies.*

Flaura K. Winston, M.D., Ph.D.

Adjunct Assistant Professor.

Garen Wintemute, M.D., M.P.H.

Associate.

Sidney M. Wolfe, M.D.

Senior Associate.

Alan T. Wright, M.D., M.P.H.

Associate.

David E. Yamamoto, M.B.A.

Associate.

Ming-Chin Yang, Dr.P.H., M.P.H.

Associate.

Yuchi Young, Dr.P.H., M.P.H.

Associate. *Health Policy and Management, Health outcome assessment, aged, falls, hip fractures, rehabilitation, post-acute care, disability, long-term care, CCRC.*

Health Policy and Management

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

300.600 INTRODUCTION TO HEALTH POLICY. (4 units). First term. Anderson, Gerard.

Introduces the material covered in the Department of Health Policy and Management. Focuses on four substantive areas that form the analytic basis for many of the issues in Health Policy and Management. The areas are: (1) economics and financing, (2) need and demand, (3) politics/ethics/law, and (4) quality/effectiveness. Illustrates these issues using three specific policy issues: (1) injury, (2) medical care, and (3) public health preparedness.

Student evaluation: Mid-term and final paper.

300.601 INTRODUCTION TO HEALTH POLICY I. (2 units). First term. Offered via the Internet only.

Presents broad perspectives for understanding health policy within historical, political, and economic contexts. Analyzes public and private health care provision in the U.S., problems of vulnerable populations and access to care, and proposals for reforming the health care system, highlighting constraints of the policy process. Addresses environmental and occupational health policy; management skills and techniques needed by policy analysts and managers; and essential perspectives of the social and behavioral sciences, law, and ethics. Also presents comparative views of health policy in developed and developing nations.

Student evaluation: Mid-term and final.

Prerequisites: Introduction to Online Learning.

300.602 INTRODUCTION TO HEALTH POLICY II. (2 units). Second term. Offered via the Internet only.

Presents broad perspectives for understanding health policy within historical, political, and economic contexts. Analyzes public and private health care provision in the U.S., problems of vulnerable populations and access to care, and proposals for reforming the health care system, highlighting constraints of the policy process. Addresses environmental and occupational health policy; management skills and techniques needed by policy analysts and managers; and essential perspectives of the social and behavioral sciences, law, and ethics. Also presents comparative views of health policy in developed and developing nations.

Prerequisites: Introduction to Online Learning; 300.601.

300.651 INTRODUCTION TO THE U.S. HEALTHCARE SYSTEM. (4 units). Second term. Forrest, Chris. Also offered via the Internet, fourth term.

Describes and analyzes the way that health care is financed in the U.S. in both the public and private sectors and how this affects delivery of services and health outcomes. Explores how hospitals and physicians in the United States are paid and organized, and the major issues they face in the current environment. Presents conceptual for access to care, vulnerability, health insurance, primary care, cost containment, managed care, long term care, and quality of care. International comparisons of health care systems examine alternative methods of organizing and financing health services within the U.S. and other developed countries. Introduces the major policy issues concerning the organization, financing, and delivery of healthcare facing the nation.

Student evaluation: Student evaluation based on three essays and class participation.

Prerequisites: Introduction to Online Learning.

300.652 POLITICS OF HEALTH POLICY. (4 units). Third term. Navarro, Vicente.

Analyzes the politics of health policy according to the dictum of one of the founders of public health, R. Virchow, "Public Health is a Social Science and Politics is Public Health in its most profound sense." Focuses on the political reasons for the underdevelopment of health and health care in the U.S. and in the world. Looks at how economic, social, and political power are reproduced through political institutions, and the consequences on the level of health and type of health care that countries have. Critiques the role of national and international agencies such as the WTO, World Bank, IMF, and WHO in facilitating and/or hindering development of health. Also focuses on U.S. governmental policies that diminish or increase the maldistribution of power outside and within the health sector.

Student evaluation: Student evaluation based on class participation and a paper.

300.700 TEACHING ASSISTANT ORIENTATION SEMINAR. (1 unit). First

term. Sleicher, Dana.

Introduces the role of the teaching assistant. Topics include JHU policies on grades, cheating, and sexual harassment; student evaluation; leading the discussion group; and the need for developing a personal philosophy of teaching. Students are encouraged to share their experiences as TAs and teachers.

Student evaluation: Student evaluation based on a brief paper.

300.701 DOCTORAL SEMINAR IN HEALTH AND PUBLIC POLICY. (2 units). Third and fourth terms. Oliver, Tom.

Introduces the concepts and theories of health and public policy to HPM doctoral students.

Student evaluation: Student evaluation based on an exam and final paper.

300.702 DOCTORAL SEMINAR IN SOCIAL AND BEHAVIORAL SCIENCES. (4 units).

Second term. Ensminger, Margaret.

Introduces the key concepts and theories of social and behavioral sciences to HPM doctoral students.

Student evaluation: Student evaluation based on an exam and integrating paper.

Prerequisites: 300.701.

Consent of instructor required.

300.703 DOCTORAL SEMINAR IN HEALTH SERVICES RESEARCH. (4 units). Fourth term.

Anderson, Gerard.

Presents key concepts and theories in health services research to HPM doctoral students.

Student evaluation: Student evaluation based on an exam and integrating paper.

Prerequisites: 300.702.

Consent of instructor required.

300.704 HPM DOCTORAL CAPSTONE COURSE. (2 units). Fourth term. Shi, Leiyu.

Designed to help HPM doctoral students integrate their first year curriculum and prepare them for the HPM qualifying exam.

Student evaluation: Student evaluation based on preparation of an outline of a qualifying exam question.

Consent of instructor required.

300.750* TEACHING AT THE UNIVERSITY LEVEL. (3 units). Third term. Curbow, Barbara. Next offered 2005-2006.

Prospective instructors explore and practice key skills, including course planning and development; lecture planning and delivery; discussion leading; evaluating students and courses; and maintaining positive interactions with students. Encourages students to articulate their own educational philosophy. Identifies and discusses characteristics and behaviors of exemplary teachers.

Student evaluation: Student evaluation based on two brief papers and a final project in which students work towards developing their own course or developing and delivering a lecture on material in their field.

Consent of instructor required.

* Not offered every year as indicated.

300.751* TEACHING AT THE UNIVERSITY LEVEL PRACTICUM. (2 units). Fourth term.

Curbow, Barbara. Next offered 2005-2006.

Students practice teaching skills by refining lectures, course outlines, and course descriptions begun in 300.750.

Student evaluation: Student evaluation based on revisions and extensions of assignments from 300.750.

Prerequisites: 300.750.

301.607 HEALTH POLICY ANALYSIS AND SYNTHESIS. (4 units). Second and fourth terms.

Edmunds, Margo. Former course number 303.650.

Lectures, lab exercises, and case studies of policy issues develop expertise in analyzing and synthesizing policy issues and in preparing policy documents and oral presentations.

Student evaluation: Student evaluation based on individual and group writing assignments and oral presentations.

Prerequisites: 300.600. 308.601 and understanding of the major health policy issues recommended.

301.612* HEALTH, POVERTY AND PUBLIC POLICY IN THE U.S. (3 units). First term.

Ensminger, Margaret. Former course number 306.692. Not offered 2005-2006.

Explores the relationship between health, poverty, and public policy in the U.S. and assesses past and future strategies to remedy inequities in health and health care. Addresses theories of social stratification in the U.S.; distribution of poverty across gender, age, and ethnic/racial groups; antipoverty programs and their effects; effects of changes in health care organization on the poor; and possible modifications to provide greater equity. Guest lecturers include physicians and public administrators working in programs designed to meet the needs of poor communities.

Student evaluation: Student evaluation based on class participation, a mid-term take-home assignment, and a final paper.

301.615 SEMINAR IN HEALTH

DISPARITIES. (4 units). Fourth term. LaVeist, Thomas.

Students learn the nature of racial and ethnic disparities in health status, and become familiar with the research literature on race disparities. Students responsible to do all readings, contribute an annotated bibliography of research on a minority health topic selected by the students (with consent of the instructor) and produce a literature review on that topic.

Student evaluation: Student evaluation based on class participation, one class presentation, one annotated bibliography and an 8-12 page literature review.

Consent of instructor required.

301.617* SOCIOLOGICAL PERSPECTIVES ON HEALTH. (3 units). First term.

Ensminger, Margaret. Former course number 306.617. Next offered 2005-2006.

Presents sociological concepts, paradigms, and theories frequently cited or used as sources of basic ideas and assumptions in contemporary analyses of health behavior and health systems. Discusses the social construction of concepts and theories, especially those that apply to our understanding of health and illness, and the implications of sociological perspectives for public health, including social stratification, deviance, social control, role performance, and stress.

Student evaluation: Student evaluation based on a discussion paper and a final exam.

301.620 HEALTH, WORK AND LABOR MOVEMENT. (3 units). Second term. Sattler, Barbara. Former course number 303.655.

Examines the history and current structure of the labor movement as it relates to health and occupational hazards. Presents an overview of the relation between work/unemployment, gender, and health, focusing on disease concepts and explanatory structures. Describes the role of the labor movement in an international perspective and discusses the experiences of workers in Italy, Sweden, and Spain as participants in workplace health. Guest speakers discuss how U.S. unions have addressed hazards and present examples of cooperation between health professionals and workers on occupational health issues.

Student evaluation: Student evaluation based on class participation, a paper, and a final presentation.

301.627 UNDERSTANDING AND PREVENTING VIOLENCE. (3 units). Fourth term. Webster, Daniel. Former course number 304.697.

Explores the role of public health in reducing violence and associated injuries. Focuses on factors that contribute to interpersonal violence, policy issues relevant to violence and violence prevention, and approaches to violence prevention and their effectiveness. Topics include the epidemiology of violence; biological, psychological, social, and environmental factors related to violence; intimate partner violence; the role of alcohol and other drugs; firearms policy; behavioral approaches to violence prevention; and community efforts to prevent violence.

Student evaluation: Student evaluation based on three take-home problem sets.

301.645 ISSUES IN HEALTH ADVOCACY. (3 units). Third term. DeFrancesco, Susan; Hearne, Shelley.

Informs students about the role of advocacy in public health and prepares them to utilize advocacy tools to influence the public policy process. Topics include identifying strategies, using data in advocacy campaigns, grassroots organizing, coalition building, the courts and health advocacy, lobbying restrictions of 501(c)(3) organizations, and understanding and working with the media. Involves case studies of public health advocacy campaigns and lectures by experienced health advocates.

Student evaluation: Student evaluation is based on three writing assignments and class participation.

301.647 TERRORISM AND PUBLIC HEALTH. (3 units). Third term. Burke, Thomas; Goldman, Lynn; Links, Jonathan.

Provides an overview of the threat of terrorism and the critical issues facing public health leaders and policy makers. Explores public health preparedness and response as well as issues pertaining to communication and civil liberties.

Student evaluation: Final paper.

301.655 HUMAN RIGHTS FOR PUBLIC HEALTH PRACTITIONERS. (2 units). Third term. Gostin, Lawrence.

Examines the basic trends and developments in human rights in the modern era. Emphasizes the evolution of new concepts, instruments, and institutions since 1945. Presents and discusses a conceptual approach to the relationships between public health and human rights.

Student evaluation: Student evaluation based on a paper and a presentation.

Consent of instructor required.

301.657 ALCOHOL AND HEALTH. (2 units). Third term. Li, Gouhua. Jointly offered with the School of Medicine.

Introduces students to the various health consequences related to the use/abuse of alcohol, public policy issues in preventing alcohol problems, and state-of-the-art research techniques for screening, detection, and intervention in alcohol problems.

Student evaluation: Student evaluation based on class participation and a paper.

301.775 HEALTH INFORMATION PRIVACY AND POLICY. (2 units). Second term. Hodge, James G.

Personally-identifiable health information is increasingly available in electronic form in health databases and through online networks in the public and private sectors. Responsible acquisition and use of this data can enhance patient autonomy and clinical treatment and improve health research and public health surveillance. However, the proliferation of health data also presents new legal and policy challenges. Federal, state, and local government law and policy-makers have recognized the need to protect health information privacy to prevent discrimination against individuals and groups and maintain the quality and reliability of health data. Yet considerable debate over the methods, approaches, and extent of protections has led to irregular health information privacy protections. This course addresses issues relating to protecting health information privacy in the modern information era. Although theoretical and ethical discussions underlying health information privacy are included, the course focuses on the legal, policy, and practical issues surrounding the protection of health information privacy through an examination and application of major international, federal, and state privacy laws and policies.

Student evaluation: Student evaluation based on class participation and final paper.

302.650 WORK ORGANIZATION, SOCIETY AND HEALTH. (3 units). Fourth term. Johnson, Jeffrey.

Course integrates sociological and social epidemiological perspectives on the relationship between social inequality, work, the labor process and health. Examines the organization and content of the psychosocial work environment and the impact of these types of exposures on health and illness. A historical and comparative frame of reference is used to identify distinct forms of work organization that have been and continue to be produced by political and economics forces operating at national and global levels.

Student evaluation: Student evaluation based on final paper.

302.683 PRINCIPLES OF HEALTH BEHAVIOR CHANGE. (4 units). Second term. Wissow, Lawrence. Former course number 306.615.

Provides a survey of approaches to health behavioral change from multiple perspectives. Reviews major intra- and extra-personal theories of health behavior, and includes sections on stress and coping models, as well as cultural, family, and community influences. Other sections include a brief review of the biology of learning and memory, as well as effects associated with health-related decisions. Maintains developmental-lifespan perspective (contrasting approaches for individuals of different ages), a multi-cultural perspective, and an awareness of the different ways in which helpers relate to the people and populations that they help. There are two main forms of evaluation: First, students try a health-related behavior change of their own and report on this through brief journal entries. Second, the students work in groups to design frameworks, drawn from course content, for evaluating health behavior change interventions. These frameworks are then used individually to critique a published account of an intervention of the student's choice.

Student evaluation: Student evaluation based on a take-home mid-term exam and a final paper.

302.685 PSYCHOSOCIAL FACTORS IN HEALTH AND ILLNESS. (4 units). Third term. Latkin, Carl. Jointly offered with the Department of Epidemiology.

Reviews studies on the roles of social and psychological factors, such as socioeconomic status, mobility, ethnicity, stress, social support, coping, and illness behavior, in selected health disorders and chronic diseases. Discusses factors in relation to disease etiology, recognition of and response to symptoms, seeking care, the doctor-patient relationship and communication patterns, compliance, the course of disease, and disease outcomes.

Student evaluation: Student evaluation based on a paper.

302.688 RESEARCH DESIGN IN THE SOCIAL AND BEHAVIORAL SCIENCES. (3 units). Fourth term. Klassen, Ann.

Provides an overview of the design and conduct of research in the social and behavioral sciences, as applied to public health. Drawing primarily from the research perspectives and methodologies of sociology, anthropology, and psychology, students examine the formulation of a research question; selection of a research design, study site, and population; and issues and methods of data collection. Evaluates the major types of social sciences research design (experimental, quasi-experimental, observation), and discusses the ways in which each social science perspective shapes the conduct and results of research, compared to other disciplines in public health, such as epidemiology.

Student evaluation: Student evaluation based on a critique of existing research and on a research design.

Prerequisites: Two terms biostatistics or consent of instructor. Social or behavioral sciences recommended.

Consent of instructor required.

302.690 SOCIAL AND BEHAVIORAL ASPECTS OF PUBLIC HEALTH. (4 units).

First term. Wissow, Lawrence. Former course number 300.603.

Lectures, readings, and seminars demonstrate how processes within the psycho-social-cultural and political structures of society affect different spheres of public health, including the type and distribution of illness and disease; the modes of intervention used in the prevention of illness, disease, and injury; and the organization of health services at the national, international, and community levels.

Student evaluation: Student evaluation based on a final exam.

302.695 PSYCHOSOCIAL ONCOLOGY. (2 units). Third term. Gibbons, M. Christopher.

Students will be introduced to the historic origins of the field of psychosocial (behavioral) oncology. Students gain an understanding of macro and molecular cancer biology, the theoretic basis and mechanistic pathways through which social and environmental factors influence cancer incidence, morbidity, therapeutics, mortality, and outcomes. Students investigate current research gaps, possible interventions, and the implications of potential policy solutions designed to reduce the procarcinogenic potential of socio-environmental and healthcare system factors.

Student evaluation: Student evaluation based on a paper, presentation and a final exam.

303.602 FUNDAMENTALS OF HEALTH EDUCATION AND HEALTH PROMOTION.

(3 units). First term. Burke, Jessica; Gielen, Andrea. Also offered via the Internet, fourth term. Former course number 306.637.

Provides an overview of the breadth of programs and diversity of settings in the field of health education in health promotion, and an opportunity to develop skills in program planning. Explains the importance of health behavior as a contributor to current public health problems and the role of health education and health promotion programs in addressing them, drawing examples from the literature on community-based health education, patient education, school health, and work-site health promotion. Also discusses issues of ethical standards and quality assurance in health education and health promotion.

Student evaluation: Student evaluation based on class participation and a needs assessment and program plan.

Prerequisites: Introduction to Online Learning.

303.604 PROGRAM EFFECTIVENESS IN HEALTH ED AND HEALTH PROMOTION.

(4 units). Fourth term. Departmental faculty. Former course number 306.638.

Introduces theory and methods to evaluate public health education and health promotion interventions. Addresses process and outcome evaluations strategies, and incorporates quantitative and qualitative methods. Examines and critically assesses published interventions programs evaluations in a variety of public health topics (e.g., cardiovascular disease, cancer, HIV, injury).

Student evaluation: Student evaluation based on a critique of a published program evaluation and a research proposal evaluating a public health intervention.

303.606 IMPLEMENTATION AND SUSTAINABILITY OF COMMUNITY-BASED HEALTH PROGRAMS.

(3 units). Fourth term. Bowie, Janice. Former course number 306.639.

Uses projects in international and domestic settings to illustrate and evaluate the program component delivery process and continuation or sustainability of activities and benefits of community-based disease prevention and health promotion programs after initial funding ends. Covers theories of innovation and organizational change; community participation and involvement; programmatic, cost-benefit, and ethical considerations related to the goal of sustainability; program characteristics associated with sustainability; and the relationships between investments in health and overall community development.

Student evaluation: Student evaluation based on class participation and a paper.

303.607 COMMUNITY OUTREACH: ISSUES AND PRACTICE.

(3 units). Second term. Farfel, Mark. Former course number 304.696.

Provides an understanding of the issues in and opportunity for research in a community setting; practical skills needed to link the researcher and the community; and direct contact with communities and their organizations. Local organizers present basic methods of outreach to community organizations. Class sessions and required field activities familiarize students with the development and operation of existing/proposed community-based public health projects. Involves neighborhood walk-throughs and meetings with community leaders.

Student evaluation: Student evaluation based on class participation and a paper.

Consent of instructor required.

303.609 HEALTH AND HOMELESSNESS. (3 units). Third term. Bone, Lee. Jointly offered with the School of Medicine and the School of Nursing. Former course number 306.601.

Introduces the issues of homelessness and its relationship to health. Lectures, seminars, and community experience present factors leading to homelessness, myths about homelessness, barriers to accessing services, health problems that arise from homelessness, multidisciplinary approaches to health care from homeless persons, and advocacy strategies.

Student evaluation: Student evaluation based on participation in workshops, community site observational sessions, and a project/written report.
Consent of instructor required.

304.620 INTRODUCTION TO PERSUASIVE COMMUNICATIONS: THEORIES AND PRACTICE. (4 units). Second term. Rimal, Rajiv. Jointly offered with the Department of Environmental Health Sciences. Former course number 306.690.

Readings, lectures, discussions, and exercises prepare students to apply selected social-psychological and health communication theories and research to the development of effective health messages. Emphasizes critical thinking skills in analyzing core elements of persuasive communication and the applicability of social science theory to health campaigns. Also emphasizes theory. It is designed with the old adage that there is nothing more practical than a good theory. Although the application of theory in designing effective messages is an important element of the course, the primary focus is on understanding various theoretical approaches to effective message design, cognitive processing, and attitude change.

Student evaluation: Student evaluation based on an exam and a final project.

Prerequisites: Previous course in psychology, preferably social psychology, required of undergraduates.

304.625 COMMUNICATION STRATEGIES FOR HEALTH EDUCATION AND HEALTH PROMOTION. (4 units). Third term. Roter, Debra. Former course number 306.622.

Presents various communication strategies used internationally and domestically in health education and health promotion programs at the community level. Students critically assess the appropriateness of strategies for specific populations through case studies and hands-on experiences that develop skills to apply in group work (focus groups) and in the production of health education materials. Emphasizes the application of theory underlying community-wide media campaigns, interventions based on adult education for critical thinking, and small group approaches. Analyzes the role of mass media and supportive legislation for health education and health promotion.

Student evaluation: Student evaluation based on three brief essays (10 pages).

304.627 INTERPERSONAL INFLUENCE IN MEDICAL CARE. (4 units). Fourth term. Roter, Debra. Former course number 306.746.

Focuses on the patient-provider relationship and its cognitive, attitudinal, behavioral, and clinical consequences. Discusses communication during the medical encounter; professional preparation and socialization; patient expectations for care and emerging consumerist trends; and evaluation of physician performance in relation to patient and provider outcomes. Emphasizes patient recall, compliance, utilization, and clinical outcomes.

Student evaluation: Student evaluation based on a final paper.

305.607 PUBLIC HEALTH PRACTICE. (4 units). Second term. Goldman, Lynn. Also offered via the Internet, fourth term. Former course number 300.604.

Focuses on the areas of knowledge and skill necessary to the administration of health agencies. Studies administrative structure, intergovernmental relations, legislation, politics, and the public budgetary process with reference to health departments on the federal, state, and local levels. Reviews public sector issues for which health agencies are responsible, including AIDS, health promotion strategies, primary care, and immunization programs.

Student evaluation: Student evaluation based on a mid-term exercise, a final essay, and class participation.

Prerequisites: Introduction to Online Learning.

305.610 ISSUES IN INJURY AND VIOLENCE PREVENTION. (2 units). First term. Vernick, Jon. Jointly offered with the Department of Environmental Health Sciences. Former course number 304.683.

Addresses prominent sources of injury, including motor vehicles, falls, fires, and firearms. Explores the biological, behavioral, and social issues relating to injury and violence prevention and policy. Emphasizes basic strategies for preventing injuries and deaths in the workplace, home, travel, and recreation, and the relative effectiveness of various types of approaches. Students who wish to write a paper may sign up for extra credit as special studies.

Student evaluation: Student evaluation based on an objective quiz, a final exam, and class participation.

305.612 EPIDEMIOLOGY OF INJURIES. (4 units). Third term. Sorock, Gary. Also offered via the Internet, third term. Jointly offered with the Department of Epidemiology. Former course number 304.684.

Helps students interested in working on injury control by providing them with a solid understanding of the methodological issues related to the investigation of the epidemiological aspects of injuries.

Student evaluation: Student evaluation based on homework assignments and a take-home exam

Prerequisites: Introduction to Online Learning; 340.601 & 305.610 or consent of instructor.

305.613 DESIGN AND EVALUATION OF INJURY INTERVENTIONS. (3 units). Fourth term. Fowler, Carolyn. Former course number 304.687.

Primarily focuses on injury prevention. Most concepts are also directly applicable to intervention development in other areas of public health. Students develop skills in design, implementation, and evaluation of injury intervention strategies. Topics include problem definition and analysis; identifying intervention points; selecting among educational, regulatory, and technological interventions to achieve maximum likelihood of success; writing measurable program goals and objectives; designing implementation plans; and examining methods to evaluate the efficacy and effectiveness of interventions. Focuses on developing prevention programs in a way that optimizes limited resources while achieving the maximum likelihood of success. Gives special attention to assessing the social and environmental factors that impact the development, delivery, and outcomes of interventions. Develops practical skill building.

Student evaluation: Student evaluation based on class participation, a review of one journal article, one brief take-home assignment, and a final paper.

Prerequisites: 305.610, 305.612, or consent of instructor.

305.615 OCCUPATION INJURY PREVENTION AND SAFETY PRACTICE.

(2 units). Fourth term. Lincoln, Andrew. Former course number 304.688.

Provides a link between the public health approach to occupational injury prevention, the traditions of safety science and engineering, and their relationship with ergonomics and biomechanics. Covers injury problem identification; surveillance systems; prevention efforts of unions, health departments, and industry; relationship of safety, engineering, and ergonomics; and comparison of the safety science versus the epidemiologic approaches to injury prevention.

Student evaluation: Student evaluation based on presentations of critiques of papers on the above topics.

Prerequisites: At least one occupational health or injury prevention course, or consent of instructor.

Consent of instructor required.

305.623 FUNDAMENTALS OF CLINICAL PREVENTIVE MEDICINE. (3 units). Third term. Ford, Daniel. Former course number 304.686.

Presents issues and strategies involved in incorporating preventive services into primary care practice. Introduces the concept of the periodic health examination and risk assessment/risk reduction techniques applied by physicians and other health care providers in clinical settings. Intended for students who will be engaged in primary care practice and those who will manage clinical prevention programs.

Student evaluation: Student evaluation based on class participation and a short paper.

Consent of instructor required.

305.625* INJURY MECHANISMS. (2 units).

Third term. Winston, Flaura. Next offered 2005-2006.

Lectures, demonstrations, videos, and readings present basic biomechanical engineering principles important in trauma research, and methods for incorporating them into injury epidemiologic studies. Addresses the importance of multidisciplinary injury control research, the function and limitations of common safety technologies, and the application of biomechanical principles to the definition and solution of injury problems.

Student evaluation: Student evaluation based on class participation and a paper critiquing the engineering and epidemiology literature.

Prerequisites: An injury course.

Consent of instructor required.

305.630 POLICY, POLITICS, AND TRANSPORTATION SAFETY. (2 units). Third term. Baker, Susan; Dodd, Robert.

Provides an overview of the significant role of national politics on transportation safety policy in the United States. Using case studies of notable safety enhancement efforts in aviation, highway, rail and maritime transportation, student discover the significant roles and interactions of lobbyists, industry associations, politicians, and Federal Agencies in transportation safety research and subsequent safety improvement rulemaking. Through lectures, readings and a field trip, students learn that transportation safety and injury prevention improvements often require significant efforts to successfully navigate the path from research findings to interventions that improve the traveling public's safety and health.

Student evaluation: Student evaluation based on a brief paper addressing a case study of transportation safety policy that is not addressed in class.

* Not offered every year as indicated.

305.720 BEHAVIORAL SCIENCES AND INJURY PREVENTION. (3 units). Fourth term. Gielen, Andrea; Trifiletti, Lara.

Enhances students' ability to utilize behavioral sciences theories and methods in their injury prevention programs and research. Through readings and discussion, students will be able to: (1) identify contributions of behavior change theories to injury problems; (2) describe methods used to study injury related behaviors and to evaluate behavior change interventions; and (3) critically evaluate behavioral sciences applications in injury prevention. Topics include historical and multi-level approaches to safety behaviors; behavior change theories at individual and community levels; and selected behavior change theories, their concepts and measurement issues.

Student evaluation: Class presentation and brief written critique of a published study.

Prerequisites: An injury course.

306.650 PUBLIC HEALTH AND THE LAW. (3 units). Second term. Teret, Stephen. Former course number 304.681.

Introduces non-lawyers to the important role played by the law in determining the public's health. Students analyze judicial opinions, statutes, and regulations in classroom discussions. Covers substantive legal topics including the balance between individual rights and public health initiatives, privacy, medical malpractice, and informed consent.

Student evaluation: Student evaluation based on a final exam or a term paper (students choice).

Consent of instructor required.

306.655 ETHICAL ISSUES IN PUBLIC HEALTH. (3 units). Third term. Faden, Ruth. Former course number 303.658.

Lectures and small group discussions focus on ethical theory and current ethical issues in public health and health policy, including informed consent, resource allocation and the right to life, lifestyle and health, and control of health hazards.

Student evaluation: Student evaluation based on class participation, a group project, and a paper evaluating ethical issues in the student's area of public health specialization.

306.663 LEGAL AND ETHICAL ISSUES IN THE EVOLVING HEALTHCARE SYSTEM. (3 units). Third term. Doherty, James.

Develops skills in the ethical analysis of policies and conflicts that arise in the delivery of health care services. Explores the ethical implications of the fundamental structural changes taking place in the U.S. health care market, with attention to the perspectives of the health care professional, the organization "managing care," and the consumer. Topics include basic and applied works in ethical theory; ethical issues in provider selection; the changing physician-patient relationship; reimbursement and financial incentives; quality assurance and utilization review; experimental treatment; and the care of vulnerable and high-risk populations.

Student evaluation: Student evaluation based on class participation and a short take-home exercise.

Consent of instructor required.

306.665 RESEARCH ETHICS AND INTEGRITY: U.S. AND INTERNATIONAL ISSUES. (3 units). Third term. Kass, Nancy. Jointly offered with the Department of International Health.

Acquaints students with an introduction to ethical theory and principles, including ethics requirements when conducting research with human subjects in the U.S. and/or developing countries. Through lectures and small group case discussion, the following topics are covered: ethical theory and principles; informed consent in research; Institutional Review Boards; the just selection of research participants; cultural relativism; genetic research; ethical issues in vaccine research; ethics and human rights; appropriate use of placebos; what is owed to research participants, communities, and countries after research is completed; the use of animals in research; and scientific and academic integrity. Students in this course select to be in the U.S. track or the international track. While most lectures are identical for the two tracks, case discussions and assignments are different. The international track is geared toward international and American students conducting research in developing country settings. This course satisfies the NIH's and the School's requirement for training in the responsible conduct of research.

Student evaluation: Student evaluation based on an in-class exercise, a consent assignment, individual and group case analysis work, and a final exam.

306.680 ETHICS OF HUMAN SUBJECT RESEARCH. (2 units). Fourth term. Offered via the Internet only.

Introduces students to the ethics of human subject research. Explores ethical theory and principles, followed by a brief history of research ethics. Topics covered include: informed consent for research participation, role and function of institutional review boards, just selection of research subjects, ethical aspects of study design, and privacy and confidentiality.

Student evaluation: Student evaluation based on participation in moderated discussions, an informed consent exercise and written case analyses.

Prerequisites: Introduction to Online Learning.

Consent of instructor required.

306.685* BIOETHICS AND THE LAW SEMINAR. (2 units). Fourth term. Hodge, James G. Not offered 2005-2006.

Examines legal, ethical, and social issues arising from developments in public health, medicine, and the biological sciences. Topics vary, but may include issues concerning death and dying, health information privacy, human subject research, bioterrorism, and public health ethics. Each topic encompasses a number of controversial legal and ethical problems that will be selectively explored through lectures, class discussions, research and writing, and student presentations.

Student evaluation: Student evaluation based on final paper and in-class discussion.

308.602 ROLE OF GOVERNMENT IN HEALTH POLICY I. (3 units). Third term.

Oliver, Tom.

Analyzes the historical and contemporary role of government in American health policy. Examines the roles, resources and strategies of key participants, both inside and outside of government, who influence health policy development and implementation. Introduces important concepts, theories and literature concerning the impact of politics on health policy and provides a forum to apply political dimensions to specific health policy issues.

Student should not take this course and 308.601.

Student evaluation: Student evaluation based on written, take-home exams and class participation.

Prerequisites: 300.600.

308.603 ROLE OF GOVERNMENT IN HEALTH POLICY II. (3 units). Fourth term. Oliver, Tom.

Applies key concepts and theories of policy making to classic case studies in health politics and policy. Students prepare summaries of selected course readings, participate in an original case study on a policy issue of their choice, and make an oral presentation of their case study. The case study reviews the history and role of a selected governmental agency or program in the health field, and presents a detailed analysis of a key episode in the history of that agency or program, the policy process during that episode, and the outcomes of that process. Students should not take this course and 308.601.

Student evaluation: Student evaluation based on written, take home exams and class participation

Prerequisites: 300.600, 308.602; or instructor consent.

Consent of instructor required.

308.610 THE POLITICAL ECONOMY OF SOCIAL INEQUALITIES AND ITS CONSEQUENCES FOR HEALTH AND QUALITY OF LIFE. (3 units). Third term. Navarro, Vicente.

Focuses on the economic and political causes for the growth of social inequalities in the U.S. and in the world and its consequences for health and quality of life. Emphasizes the increasing concentration of power and the way it appears in health and vital statistics. Requires active participation of the students in the discussion of the issues involved. Also discusses the classical works of Wilkinson, Kawachi, Kennedy, Muntaner, Shi, Navarro and others.

Student evaluation: Student evaluation based on class participation and essays.

Consent of instructor required.

308.625 MAKING FEDERAL HEALTH POLICY: THE REAL WASHINGTON DC. (3 units). Fourth term. Anderson, Gerard.

Examines the various entities that influence health policy. Guest lecturers from Washington, D.C. discuss the policy-making process from the perspective of researchers, think tanks, lobbyists, administration officials and Congress.

Student evaluation: Mid-term and final paper.

308.665 FINANCING AND DELIVERY OF HEALTH SERVICES FOR VULNERABLE POPULATIONS. (2 units). Fourth term. Abrams, Rhoda.

Provides an overview of public policy issues associated with the organization, financing, and delivery of health services to vulnerable populations and the safety net providers that serve them. Addresses the impact of competitive market forces, financing, organizational subsidies, population factors, and federal, state, and local policies regarding health services. Analyzes (1) public funding programs for vulnerable populations, (2) the relationship between low income populations and policies of managed care organizations, (3) the interdependent roles and effects of federal, state, and local policies on health services for vulnerable populations, and (4) strategies to integrate public and private funding streams to ensure financial viability and survival of safety net providers.

Student evaluation: Student evaluation based on class participation, a midterm, and a final paper.

309.605 HEALTH ISSUES FOR AGING POPULATIONS. (3 units). First term. Burton, Lynda; Leff, Bruce. Former course number 303.649.

Introduces the study of aging and its implications for individuals, families, and society, and the background for health policy related to older persons. Presents an overview on aging from different perspectives: demography, biology, epidemiology of diseases, physical and mental disorders, functional capacity and disability, health services, federal and state health policies, social aspects of aging, and ethical issues in the care of older individuals.

Student evaluation: Student evaluation based on a presentation and a final exam.

309.606* LONG-TERM CARE SERVICES FOR AGING POPULATIONS. (3 units). Fourth term. Willging, Paul. Former course number 303.691. Next offered 2005-2006.

Considers the service delivery programs designed to meet the special needs of seniors. Reviews care and service systems from the unique perspective of an aging population, including the physiological and psychological changes relevant to seniors. Analyzes the underpinnings of senior housing and care, including the demographics of aging, the role of financing and the evolving marketplace. Attention is placed on the determinants of quality care, various models of care, and the critical role of quality management.

Student evaluation: Student evaluation based on reports, class participation, and a final exam.

Prerequisites: 300.600.

309.607 INNOVATIONS IN HEALTH CARE FOR AGING POPULATIONS. (3 units). Second term. Boulton, Chad.

Acquaints students with the nature of the health care received by older Americans at home and in hospitals, nursing homes, emergency departments, rehabilitation facilities, and outpatient offices. Presents successful and promising innovations in the health care of older people. Provides students with available evidence about the costs and effectiveness of these innovations.

Student evaluation: Class participation, literature critiques and paper.

Prerequisites: Public Health students. Consent of instructor required for undergraduate students.

309.615 INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION. (4 units). Second term. Riley, Anne. Former course number 303.665.

Introduces basic methods for undertaking research and program evaluation within health services organizations and systems, and reviews major completed studies. Topics include the relationship between health services research (HSR) and health care policy and management; the multidisciplinary philosophy of HSR; research design, including experimental and quasi-experimental approaches; issues of reliability, validity, and measurement; survey research techniques; use of existing data systems; basic cost benefit and effectiveness analysis; and measurement of quality of care. Students critique published HSR studies and develop a design for a research or evaluation project. Intended for students who will be carrying out policy research, social science research, or program impact evaluation within health delivery systems; or applying the results of HSR done by others.

Student evaluation: Student evaluation based on mid-term and final exams.

309.616 INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION I. (2 units). Third term. Offered via the Internet only.

Description: same as 309.615. Multi-term, (Third and fourth terms). Part I necessitates enrollment in part II.

Student evaluation: Method of student evaluation based on midterm exam, final exam, and lab session participation.

Prerequisites: Introduction to Online Learning. **Consent of instructor required.**

309.617 INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION II. (2 units). Fourth term.

Offered via the Internet only.

Description: same as 309.615. Multi-term, (Third and fourth terms). Part I necessitates enrollment in part II.

Student evaluation: Method of student evaluation based on midterm exam, final exam, and lab session participation.

Prerequisites: Introduction to Online Learning.

Consent of instructor required.

309.620 MANAGED CARE AND HEALTH INSURANCE. (3 units). Third term. Weiner, Jonathan. Former course number 303.662.

Presents an overview of major issues related to the design, function, management, regulation, and evaluation of health insurance and managed care plans. Provides a firm foundation in basic concepts pertaining to private and public sector health insurance/benefit plans, both as provided by employers and government agencies such as Medicaid and Medicare. Key topics include population care management techniques, provider payment, organizational integration, quality and accountability, cost-containment, and public policy. The course makes extensive use of outside experts Course is relevant for management- or policy-oriented students who will be working in, or interrelating with, public and private (both for-profit and not-for-profit) health insurance plans and organized delivery systems such as HMOs and hospital/physician “integrated” delivery systems. Course is also relevant to students who will be researching and analyzing these systems. Although the emphasis is placed on the US, the material is applicable to international students who are interested in financing and organization of highly developed medical care delivery systems in other nations.

Student evaluation: Student evaluation based on a mid-term and a take-home final exam.

Prerequisites: 300.600 or 300.651.

309.630 EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEMS. (3 units). Fourth term. MacKenzie, Ellen. Former course number 303.672.

Presents current research and program initiatives in pre-hospital and in-hospital care of the injured. Covers current program and policy issues related to the delivery of emergency medical services, especially to the injured. Topics include technological advances in the acute care management of injuries, the regionalized approach to the delivery of emergency medical services, strategic planning for the financing of regionalized systems, manpower issues in the delivery of emergency care, and monitoring and appropriate methodologies for performance evaluation of EMS systems.

Student evaluation: Student evaluation based on a paper.

Prerequisites: 300.600 required of undergraduates.

309.635 PUBLIC HEALTH PERSPECTIVE ON DISABILITY. (3 units). Third term.

MacKenzie, Ellen.

Examines the epidemiology of disability and its implications for health services programs and policies aimed at improving quality of life for people with disabilities. Focuses on the patterns and trends of physical disabilities common to children, working age adults, and elders. A framework for studying the disabling/enabling process with special attention directed at understanding how the natural and built environments interact with the individual's abilities to create barriers and facilitate opportunities. Special topics address current and emerging issues in the organization, financing, and delivery of health and human services, including the role of managed care, options for consumer-directed services at the state and federal levels, disparities in access to assistive devices and support services, and the impact of disability policy on access and accommodations.

Student evaluation: Student evaluation based on final paper.

Prerequisites: 340.601 and 300.600.

Consent of instructor required.

309.640 INFORMATICS IN PUBLIC

HEALTH. (3 units). Third term. Lehmann, Harold; Orlova, Anna.

Public health informatics deals with the rapidly developing scientific field that integrates the practice of medicine and public health with information technology. This course provides public health professionals with an understanding of the knowledge infrastructure, security concerns, functions, tools and systems comprising the field of public health informatics. Specifically, the course deals with optimizing the collection, verification and utilization of data that relates to a population for the purpose of generating knowledge to support public health practices, policy decisions, research development and public communication.

Student evaluation: A research paper (specification document for an information system for a public health issue and/or domain), homework assignments (multiple choice questionnaires), and participation in 3- to 4-person study-group work on selected case studies.

Prerequisites: Familiarity of working with public health data or other information systems.

309.712 ASSESSING HEALTH STATUS AND PATIENT OUTCOMES. (4 units). Second term.

Wu, Albert. Former course number 303.770.

Provides an understanding of the conceptual basis for measures of health; some of the common measures, their properties, and strengths and weaknesses; and a framework for judging the appropriateness of a particular measure for students' own work.

Student evaluation: Student evaluation based on two papers.

309.714 PATIENT OUTCOMES AND QUALITY OF HEALTH CARE. (4 units).

Fourth term. Powe, Neil.

Examines the role of patient outcomes studies (health status/quality of life, clinical status, satisfaction, and cost of care) in assessing quality of health care. Examines conceptual approaches to understanding the relationship of treatment, provider, and system characteristics to patient outcomes for acute and chronic conditions managed in outpatient or inpatient settings. Uses major outcomes studies to examine issues related to conceptualization, measurement, severity adjustment, statistical modeling, and interpretation. Focuses on the utility of patient outcomes results for improving the quality of health care services. Includes lab sessions.

Student evaluation: Student evaluation based on a final exam and presentations of group projects examining outcomes for specific diseases/health care delivery systems and proposing how to extend knowledge to contribute to better outcomes and improved quality of health care.

Prerequisites: 309.712 and 311.615 preferred, at least one required.

309.715 ADVANCED METHODS IN HEALTH SERVICES RESEARCH: RESEARCH DESIGN. (4 units). Second term. Kasper, Judith.

Covers components of research design for population-based studies drawn from secondary data. Topics include: a framework for evaluating research design, introduction to secondary data sources, defining study populations, complex sampling designs, data structure, and content in national health surveys, principles of questionnaire design, survey data collection methodologies, and selected measurement issues. Emphasizes secondary data from national health and health care surveys, but also addresses major health program administrative datasets (e.g. Medicare, Medicaid). Classroom discussion uses examples from studies of vulnerable populations, access to care, financing and service delivery to illustrate the translation of theory to practice.

Student evaluation: Student evaluation based on four exercises using a publicly available national dataset such as the Medical Expenditure Panel Survey, or one of those sponsored by the National Center for Health Statistics.

Prerequisites: 309.615 or consent of instructor.

309.716 ADVANCED METHODS IN HEALTH SERVICES RESEARCH: ANALYSIS. (3 units). Third term. Gaskin, Darrell J.

Discusses research questions typically asked in health services research. Students gain hand-on experience formulating these questions in terms that make them amenable to quantitative analysis. Topics include: defining causal pathways, choosing outcome variables, getting reliable model predictions, sample selection issues, and contending with partial observations.

Student evaluation: Students evaluated on class participation, laboratory assignments and a final examination.

Prerequisites: 140.621-624 or 140.651-654.

311.615 QUALITY OF MEDICAL CARE. (3 units). Third term. Wu, Albert. Former course number 303.670.

Introduces quality issues, including the extent to which customary care for specific health problems improves quality of life and reduces mortality, and quality assessment and assurance performed by caregivers, professional societies, government-sponsored professional review organizations, and government and other third party organizations who pay for care. Provides a basis to judge the effectiveness of quality assessment and assurance activities and to begin to develop programs.

Student evaluation: Student evaluation based on class participation, and a final exam or paper.

Consent of instructor required.

311.619* NEW GENETIC TECHNOLOGIES AND PUBLIC POLICY. (3 units). Fourth term. Departmental faculty. Former course number 303.663. Next offered 2005-2006.

Presents an overview of analysis of human genes relevant to the detection, prevention, and treatment of diseases, and examines the genetic basis for disease susceptibility and potential for harmful effects of usage of genetic technologies. Considers the role of patent policy, the biotechnology industry, the media, and other forces in disseminating new discoveries as well policies for assuring the safety and effectiveness of new genetic technologies. May also cover implications of genetic discoveries in food crops and animals. Student evaluation based on preparation for presentations (including written summaries), class participation, and a paper or take-home exam.

Student evaluation: Student evaluation based on class participation, and a final exam or paper.

Prerequisites: Some knowledge of basic genetic principles recommended.

Consent of instructor required.

312.615 THEORIES OF ORGANIZATION AND MANAGEMENT. (3 units). Fourth term. Gundlach, Ann-Michele. Former course number 302.613.

Examines theories of organization and management, especially regarding health care organization. Introduces the historical development of organization/management theory, drawing on sociology, psychology, political science, and economics. Discusses major theoretical perspectives, including open and closed, rational, and natural system perspectives.

Student evaluation: Student evaluation based on class participation and a paper.

Prerequisites: 312.612.

Consent of instructor required.

312.617 FUNDAMENTALS OF FINANCIAL ACCOUNTING. (3 units). First term. Tong, Dalton. Former course number 302.603.

Introduces the basic elements of financial and managerial accounting, including reading and analyzing financial statements, basic accounting concepts, and concepts of financial management control. Draws examples from case studies.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: Restricted to graduate students.

312.621 STRATEGIC PLANNING AND OPERATIONS. (3 units). Fourth term. Ashworth, John. Former course number 302.618.

Through lectures and case exercises students learn to apply, adjust, and link institutional planning principles and practices to day-to-day operations of health service delivery organizations. Topics include history of institutional planning in health care/evolution of theory and practice; strategic management linking mission and values with vision/direction, goals, objectives, budget, and operations; structure, process, and resource requirements for effective planning and operations; integrated planning and budgeting systems; the role of information and information analysis; and monitoring results and adjusting to reality.

Student evaluation: Student evaluation based on class participation (25%), an oral presentation (25%), and a final exam (50%).

Prerequisites: 312.612, 312.619.

Consent of instructor required.

312.623 FINANCIAL MANAGEMENT IN HEALTH CARE I. (3 units). Third term. Ellis, John. Former course number 302.620.

Case studies present an overview of financial theory and financial management principles and concepts in a health care setting. Topics include discounted cash flow analysis, long-term debt financing, equity financing, lease financing, capital budgeting, analysis, and forecasting.

Student evaluation: Student evaluation based on a team-written case analysis (60%) and its oral presentation (40%).

Prerequisites: 312.617, 312.619.

Consent of instructor required.

312.624 FINANCIAL MANAGEMENT IN HEALTH CARE II. (3 units). Fourth term. Ellis, John. Former course number 302.620.

Case studies present an overview of financial theory and financial management principles and concepts in a health care setting. Topics include discounted cash flow analysis, long-term debt financing, equity financing, lease financing, capital budgeting, analysis, and forecasting.

Student evaluation: Student evaluation based on a team-written case analysis (60%) and its oral presentation (40%).

Prerequisites: 312.617, 312.619, 312.623.

Consent of instructor required.

312.625 CASE STUDIES IN HEALTH CARE MANAGEMENT. (3 units). Fourth term. Nolan, Kevin C. Former course number 302.703.

Provides advanced instruction in the management of health care organizations. Synthesizes and applies management and finance principles to solve organizational issues illustrated in actual case studies of health care organizations.

Student evaluation: Student evaluation based on presentations and written case analyses.

Prerequisites: 312.612, 312.619.

Consent of instructor required.

312.633 HEALTH MANAGEMENT INFORMATION SYSTEMS. (3 units). Fourth term. Minear, Michael. Former course number 302.605.

Course is tailored to the needs of health care administrators. Provides a global perspective on the use of information systems in health care organizations, including provider institutions, insurers and physicians practices. Focuses on fundamental concepts of management information systems; systems planning and selection; current issues in health care informatics; clinical, financial and administrative applications; current and future role of the internet; overview of data confidentiality and security. Pertinent guest lectures will address topics and emerging trends in their environments.

Student evaluation: Student evaluation based on an evaluation of a systems initiative in a health care organization; project proposal (10%), midterm project evaluation (40%), and final project evaluation (50%).

Prerequisites: 312.612, 312.619.

312.635 HUMAN RESOURCES IN HEALTH ORGANIZATIONS. (2 units). Fourth term. Paulk, Pamela. Former course number 302.614.

Develops a basic understanding of human resources trends and issues in health care organizations. Examines topics such as human resources planning; recruitment, selection, retention, and termination; training and development; downsizing; credentialing; job analysis; compensation; benefits packages; incentive methodologies; performance appraisal; job descriptions; legal principles (EEOC, ADA, OSHA, etc.); employee rights; contract negotiation; grievances; collective bargaining; and employment handbooks.

Student evaluation: Student evaluation based on individual written analysis of a case study, and group presentation of case and class participation.

Consent of instructor required.

312.660 MARKETING IN HEALTH CARE ORGANIZATIONS. (3 units). Third term.

Bloomberg, Carol.

Introduces students to marketing concepts in health care through readings, guest speakers, small group exercises and individual study. Students learn how to conduct a situational analysis, understanding the market and consumer behavior as well as assessing the capabilities of the organization. Explores primary and secondary market research techniques. Discusses marketing strategy, including positioning and branding, program/service development, pricing, distribution, and promotion. Evaluation and measurement methods are explained.

Student evaluation: Final paper, group project and class participation.

Consent of instructor required.

312.664 INTEREST-BASED NEGOTIATION: PREPARATION ANALYSIS AND PRACTICE. (2 units). Third term. Morrison, Catherine.

Introduces the elements of interest-based negotiation and assists participants in developing the skills used in this negotiation model. Specific topics included are: the elements of interest-based negotiation, assessing a negotiation, communication skills for the negotiator, the human aspects of negotiation -- building or repairing interpersonal relationships, the use of negotiation as a conflict management tool, and discovering personal conflict handling skills. Many interactions associated with health care delivery, from contracting for services to delivering individual patient care, are a series of negotiations. The cases and examples used in this program will be drawn from actual experiences of the instructors in clinical and health care management settings, e.g. conflict among members of the health care team, provider/patient conflict, negotiation in a cost reduction environment, health care system mergers, and managed care contracting. The teaching methods will include didactic presentations, individual and small group negotiation and communication exercises, video clips, an assessment instrument, and role-plays.

Student evaluation: Student evaluation based on class participation and written analysis.

312.665 CONFLICT MANAGEMENT SKILLS TRAINING. (2 units). Third term. Morrison, Catherine.

Enhances students' understanding of various types of conflict and corresponding conflict management strategies. Focuses on the use of a diagnostic model for analyzing and managing conflict with special emphasis on the use of mediation and conciliation as conflict resolution tools. Introduces students to the structured process of mediation and develops a working knowledge of what skills and tools are employed by the mediator at each stage in the mediation process. Introduces participants to various conciliation models that serve as informal conflict intervention processes. Assists students in developing skills for using these models in the workplace. Specific topics include: the continuum of dispute resolution alternatives, conflict analysis: diagnosis and conflict management strategies, the politics of agreement -- uncovering hidden conflict, the process of mediation, and the process of conciliation. Teaching methods combine didactic presentations, small and large group exercises and discussion, video clips, simulations and role-plays. The cases used for simulations and role-plays are drawn from a health care setting.

Student evaluation: Student evaluation based on class participation and a written case study.

Prerequisites: 312.664.

312.666 CREATING AGREEMENT AND MANAGING CONFLICT IN A HEALTH CARE SETTING: ADVANCED SKILL DEVELOPMENT. (1 unit). Third term.

Morrison, Catherine.

Provides students with an opportunity to increase their proficiency in negotiation and conflict management techniques. Consists of a series of cases that engage the participants in negotiation, mediation, or conciliation processes. Students receive feedback on their skills and techniques presented in 312.664 and 312.665.

Student evaluation: Student evaluation based on class participation and a written case study due two weeks after course completion.

Prerequisites: 312.664-665.

Consent of instructor required.

313.630 COST-BENEFIT ANALYSIS:

THEORY AND TECHNIQUES. (3 units).

Third term. Frick, Kevin. Former course number 302.651.

Reviews the basic theory of welfare economics underlying the techniques of cost-benefit, cost effectiveness, and cost-utility analysis. Covers opportunity cost, the valuation of time-streams of net benefits, and problems of valuation arising from the non-existence of markets. Also focuses on techniques for monetary valuation of health states (e.g., willingness to pay in contingent markets).

Student evaluation: Student evaluation based on a short paper, a midterm exam, and a final exam.

Prerequisites: 313.640-641.

Consent of instructor required.

313.631 COST-EFFECTIVENESS,

COST-UTILITY, AND THEIR

APPLICATIONS. (3 units). Fourth term. Frick, Kevin.

Reviews techniques for cost-effectiveness and cost-utility analysis. Emphasizes framing the question, the perspective of the analysis, methods for valuing outcomes, such as the use of quality adjusted life years (QALYs), and presentation of the results. Students critique studies in the literature and present them in class.

Student evaluation: Student evaluation based on problem sets, a mini cost effective analysis, and a final paper.

Prerequisites: 313.630.

Consent of instructor required.

313.640 INTRODUCTION TO HEALTH

ECONOMICS I. (2 units). First term. Salkever, David; Waters, Hugh. Jointly offered with the Department of International Health. Former course number 302.680.

Introduces application of basic microeconomic concepts and tools to resource allocation and policy problems facing health-sector decision makers in the U.S. and internationally. Covers the application of demand concepts to health care-seeking behavior and their implications for marketing and for the design of insurance programs. Uses basic concepts of cost and production theory to examine problems in efficiency measurement and issues of market structure and antitrust policy. Demonstrates the application of basic demand and production concepts to cost-benefit analysis and related techniques. Economic approaches to evaluating performance of national health care systems are also examined.

Student evaluation: Student evaluation based on in-class and take-home examinations each quarter: (1) on basic microeconomic concepts and (2) on the application of these concepts to health and health care.

Prerequisites: If student has no college-level microeconomics background, must register concurrently for 313.642-.643.

Consent of instructor required.

313.641 INTRODUCTION TO HEALTH ECONOMICS II. (2 units). Second term.

Salkever, David; Waters, Hugh. Jointly offered with the Department of International Health. Former course number 302.681.

Introduces application of basic microeconomic concepts and tools to resource allocation and policy problems facing health-sector decision makers in the U.S. and internationally. Covers the application of demand concepts to health care-seeking behavior and their implications for marketing and for the design of insurance programs. Uses basic concepts of cost and production theory to examine problems in efficiency measurement and issues of market structure and antitrust policy. Demonstrates the application of basic demand and production concepts to cost-benefit analysis and related techniques. Economic approaches to evaluating performance of national health care systems are also examined.

Student evaluation: Student evaluation based on in-class and take-home examinations each quarter: (1) on basic microeconomic concepts and (2) on the application of these concepts to health and health care.

Prerequisites: If student has no college-level microeconomics background, must register concurrently for 313.642-.643.

Consent of instructor required.

313.642 INTRODUCTION TO MICROECONOMICS I. (1 unit). First term.

Salkever, David.

This course is intended to supplement the material taught in Introduction to Health Economics in the first and second terms for those students without prior college-level course in microeconomics. The supplement meets in conjunction with 313.640/641. In each quarter, students registering for the supplement are expected to attend all lectures and complete all exams and essay assignments.

Student evaluation: Exams include two separate final examinations each quarter: (1) on basic microeconomic concepts and (2) on the application of these concepts to health and health care.

313.643 INTRODUCTION TO MICROECONOMICS II. (1 unit). Second term.
Salkever, David.

This course is intended to supplement the material taught in Introduction to Health Economics in the first and second terms for those students without a prior college-level course in microeconomics. The supplement meets in conjunction with 313.640/641. In each quarter, students registering for the supplement are expected to attend all lectures and complete all exams and essay assignments.

Student evaluation: Exams include two separate final examinations each quarter: (1) on basic microeconomic concepts and (2) on the application of these concepts to health and health care.

313.650 PUBLIC HEALTH ECONOMICS SEMINAR I. (2 units). Third term. Departmental faculty. Former course number 302.655.

Students prepare oral and written critiques of recent research in areas of public health economics, such as health care financing; relationships of health, population, and development; determinants of health; environmental and occupational health programs; and production and regulation of hospital and medical services. Discussion focuses on theoretical and empirical techniques and considers policy implications.

Prerequisites: Substantial preparation in economics, health economics, and quantitative methods.

Consent of instructor required.

313.651 PUBLIC HEALTH ECONOMICS

SEMINAR II. (2 units). Fourth term.

Departmental faculty. Former course number 302.656.

Students prepare oral and written critiques of recent research in areas of public health economics, such as health care financing; relationships of health, population, and development; determinants of health; environmental and occupational health programs; and production and regulation of hospital and medical services. Discussion focuses on theoretical and empirical techniques and considers policy implications.

Prerequisites: 313.650.

Consent of instructor required.

313.653 MICROECONOMIC MODELS IN PUBLIC HEALTH ECONOMICS I. (3 units).

Third term. Gaskin, Darrell J.; Salkever, David. Former course number 302.653.

Introduces mathematical techniques used in microeconomic models. Demonstrates use of microeconomic theory to formulate testable hypotheses for empirical studies in health economics, preparing students for 313.650-651. Lectures cover demand theory, household production theory, theory of the firm, and empirical cost and production functions. Students complete several problem sets.

Prerequisites: Calculus, regression analysis, health economics or intermediate microeconomic theory.

Consent of instructor required.

313.654 MICROECONOMIC MODELS IN PUBLIC HEALTH ECONOMICS II. (3 units).

Fourth term. Gaskin, Darrell J.; Salkever, David. Former course number 302.654.

Introduces mathematical techniques used in microeconomic models. Demonstrates use of microeconomic theory to formulate testable hypotheses for empirical studies in health economics, preparing students for 313.650-651. Lectures cover demand theory, household production theory, theory of the firm, and empirical cost and production functions. Students complete several problem sets.

Prerequisites: 313.653.

Consent of instructor required.

313.790 UNDERSTANDING

COST-EFFECTIVENESS ANALYSIS IN

HEALTH CARE. (2 units). Third term. Offered via the Internet only.

In light of the increasing constraints on health care resources, economic analysis of medical treatments and public health interventions is becoming an increasingly common tool in health policy decision making. The primary objective of this course is to prepare students to read and interpret cost-effectiveness studies. The students are first introduced to basic economic concepts that are needed in order to understand the recommendations from the United States Panel on Cost Effectiveness in Health and Medicine. One example is the distinction between opportunity costs and budgetary costs. The recommendations are then reviewed, particularly as they apply to what students should expect to read in cost-effectiveness research reports. Finally, the relationship between cost-effectiveness results and other elements of the health care policy decision making process are discussed. A critical discussion of several current articles demonstrating cost-effectiveness analyses are an integral part of this course.

Student evaluation: Method of student evaluation based on practical exercises, class participation, and final paper.

Prerequisites: Introduction to Online Learning.

315.610 INTRODUCTION TO GENETIC COUNSELING. (2 units). First term.

Departmental faculty. Jointly offered with the National Inst. Health.

315.610 addresses the chromosomal basis of heredity, chromosomes and genes, tools of human molecular genetics, single gene inheritance, variation, polymorphism and mutation, genes in populations and genes in families. 315.611 presents the role of genetic counseling in health care and emphasizes the essential components of prenatal, pediatric, and adult genetics services. Indications for referral and genetics education and counseling components are illustrated using care examples. Clinical skills and tools are taught including family, medical and development history taking and pedigree construction. Additional case management skills such as the choice of laboratory and test interpretation, and issues in billing and reimbursement of genetic counseling services are addressed. 315.612 -613 expand on the previous two courses to examine the Hemoglobinopathics and Thalassemias as models of molecular pathology, the molecular/biochemical basis of genetic disease, genetics of cancer, gene mapping, multifactorial inheritance, and gene therapy.

Student evaluation: Student evaluation for all four courses based on class participation and problem sets.

Consent of instructor required.

315.611 INTRODUCTION TO HUMAN GENETICS I. (2 units). Second term.

Departmental faculty. Jointly offered with the National Inst. Health.

315.610 addresses the chromosomal basis of heredity, chromosomes and genes, tools of human molecular genetics, single gene inheritance, variation, polymorphism and mutation, genes in populations and genes in families. 315.611 presents the role of genetic counseling in health care and emphasizes the essential components of prenatal, pediatric, and adult genetics services. Indications for referral and genetics education and counseling components are illustrated using care examples. Clinical skills and tools are taught including family, medical and development history taking and pedigree construction. Additional case management skills such as the choice of laboratory and test interpretation, and issues in billing and reimbursement of genetic counseling services are addressed. 315.612 -613 expand on the previous two courses to examine the Hemoglobinopathics and Thalassemias as models of molecular pathology, the molecular/biochemical basis of genetic disease, genetics of cancer, gene mapping, multifactorial inheritance, and gene therapy.

Student evaluation: Student evaluation for all four courses based on class participation and problem sets.

Prerequisites: 315.610.

Consent of instructor required.

315.612 INTRODUCTION TO HUMAN GENETICS II. (2 units). Third term.

Departmental faculty. Jointly offered with the National Inst. Health.

315.610 addresses the chromosomal basis of heredity, chromosomes and genes, tools of human molecular genetics, single gene inheritance, variation, polymorphism and mutation, genes in populations and genes in families. 315.611 presents the role of genetic counseling in health care and emphasizes the essential components of prenatal, pediatric, and adult genetics services. Indications for referral and genetics education and counseling components are illustrated using care examples. Clinical skills and tools are taught including family, medical and development history taking and pedigree construction. Additional case management skills such as the choice of laboratory and test interpretation, and issues in billing and reimbursement of genetic counseling services are addressed. 315.612 -613 expand on the previous two courses to examine the Hemoglobinopathics and Thalassemias as models of molecular pathology, the molecular/biochemical basis of genetic disease, genetics of cancer, gene mapping, multifactorial inheritance, and gene therapy.

Student evaluation: Student evaluation for all four courses based on class participation and problem sets.

Prerequisites: 315.611.

Consent of instructor required.

315.613 INTRODUCTION TO MEDICAL GENETICS. (2 units). Fourth term. Departmental faculty. Jointly offered with the National Inst. Health.

315.610 addresses the chromosomal basis of heredity, chromosomes and genes, tools of human molecular genetics, single gene inheritance, variation, polymorphism and mutation, genes in populations and genes in families. 315.611 presents the role of genetic counseling in health care and emphasizes the essential components of prenatal, pediatric, and adult genetics services. Indications for referral and genetics education and counseling components are illustrated using care examples. Clinical skills and tools are taught including family, medical and development history taking and pedigree construction. Additional case management skills such as the choice of laboratory and test interpretation, and issues in billing and reimbursement of genetic counseling services are addressed. 315.612 -613 expand on the previous two courses to examine the Hemoglobinopathics and Thalassemias as models of molecular pathology, the molecular/biochemical basis of genetic disease, genetics of cancer, gene mapping, multifactorial inheritance, and gene therapy.

Student evaluation: Student evaluation for all four courses based on class participation and problem sets.

Prerequisites: 315.612.

Consent of instructor required.

315.620 GENETIC COUNSELING

PRACTICE I. (2 units). First term. Biesecker, Barbara. Jointly offered with the National Inst. Health.

Compares definitions of genetic counseling (GC) with objectives and service outcomes. Explores counselor values as they relate to roles and responsibilities toward clients. Introduces ethical and policy issues specific to GC in conjunction with a research agenda. Discusses and practices basic tools, including interviewing, history gathering, and case assessment, and nondirective counseling approaches.

Student evaluation: Student evaluation based on class participation and mid-term and final exams.

Consent of instructor required.

315.621 GENETIC COUNSELING PRACTICE

II. (2 units). Second term. Biesecker, Barbara. Jointly offered with the National Inst. Health.

Compares definitions of genetic counseling (GC) with objectives and service outcomes. Explores counselor values as they relate to roles and responsibilities toward clients. Introduces ethical and policy issues specific to GC in conjunction with a research agenda. Discusses and practices basic tools, including interviewing, history gathering, and case assessment, and nondirective counseling approaches.

Student evaluation: Student evaluation based on class participation and mid-term and final exams.

Prerequisites: 315.620; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.623* ETHICAL AND SOCIOCULTURAL IMPLICATIONS OF GENETIC AND REPRODUCTIVE TECHNOLOGIES. (2

units). Fourth term. Geller, Gail. Jointly offered with the National Inst. Health. Not offered 2005-2006.

Using various theories of ethics (e.g., feminism, care, virtue, communitarianism, principlism, etc.) as a basis for discussion, students will present and critique the sociologic, anthropologic and empirical literatures that bear on the following topics: concepts of disease and normalcy; ideas of kinship and parenthood; the impact of genetic and reproductive technology on the role of women (including issues of gender inequity); involvement of women in genetic and reproductive research; cross-cultural differences in the view of women, pregnancy, parenthood and reproduction (including prenatal diagnosis, abortion and surrogacy); pre-conception gamete selection and pre-implantation genetic diagnosis; gamete donation; and stem cell research.

Student evaluation: Student evaluation is based on class presentation and participation, and a short paper.

Consent of instructor required.

315.630 THERAPEUTIC GENETIC

COUNSELING I. (2 units). Third term.

Biesecker, Barbara. Jointly offered with the National Inst. Health.

Prepares students to develop an applied theory for genetic counseling practice. Presents a client-centered approach as adapted for short-term therapy related to genetic conditions, using case examples and role-playing to implement concepts and apply them to clinical scenarios; basic attending skills in conjunction with issues of countertransference; and limitations of counseling, particularly for mentally ill clients or those with pathologic grief reactions. Compares and contrasts several counseling theories.

Student evaluation: Student evaluation based on class participation and written assignments.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.631 THERAPEUTIC GENETIC

COUNSELING II. (2 units). Fourth term.

Biesecker, Barbara. Jointly offered with the National Inst. Health.

Prepares students to develop an applied theory for genetic counseling practice. Presents a client-centered approach as adapted for short-term therapy related to genetic conditions, using case examples and role-playing to implement concepts and apply them to clinical scenarios; basic attending skills in conjunction with issues of countertransference; and limitations of counseling, particularly for mentally ill clients or those with pathologic grief reactions. Compares and contrasts several counseling theories.

Student evaluation: Student evaluation based on class participation and written assignments.

Prerequisites: 315.630; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.650 FACILITATING FAMILY ADAPTATION TO LOSS AND DISABILITY

I. (2 units). First term. Magyari, Trisha. Jointly offered with the National Inst. Health.

Provides theoretical constructs for understanding the meaning of loss in maternal and child health, and techniques for short-term counseling that facilitate a healthy grief reaction for the bereaved family. Case studies of typical and atypical reactions are discussed for losses such as perinatal loss (miscarriage, stillbirth, neonatal death, termination of pregnancy for genetic reasons); birth of a child with a genetic condition/birth defect; death of a child with a chronic illness; and infertility. Topics include the psychology of pregnancy; and perinatal loss; phases of grief reaction; the art of facilitating bereavement; practical interventions in the hospital; follow-up counseling and short-term psychotherapy; resources; special needs of family members; gender differences; grandparent and sibling issues; provider issues (counter-transference, self-care, and burn-out prevention). Includes lecture, discussion, role play, video, field trips, and presentations by bereaved parents.

Student evaluation: Student evaluation based on class participation and written assignments.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.651 FACILITATING FAMILY ADAPTATION TO LOSS AND DISABILITY

II. (2 units). Second term. Magyari, Trisha. Jointly offered with the National Inst. Health.

Provides theoretical constructs for understanding the meaning of loss in maternal and child health, and techniques for short-term counseling that facilitate a healthy grief reaction for the bereaved family. Case studies of typical and atypical reactions are discussed for losses such as perinatal loss (miscarriage, stillbirth, neonatal death, termination of pregnancy for genetic reasons); birth of a child with a genetic condition/birth defect; death of a child with a chronic illness; and infertility. Topics include the psychology of pregnancy; and perinatal loss; phases of grief reaction; the art of facilitating bereavement; practical interventions in the hospital; follow-up counseling and short-term psychotherapy; resources; special needs of family members; gender differences; grandparent and sibling issues; provider issues (counter-transference, self-care, and burn-out prevention). Includes lecture, discussion, role play, video, field trips, and presentations by bereaved parents.

Student evaluation: Student evaluation based on class participation and written assignments.

Prerequisites: 315.650; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.670* DEVELOPMENTAL BIOLOGY AND HUMAN MALFORMATIONS I. (1 unit).

First term. Departmental faculty. Jointly offered with the National Inst. Health. Next offered 2005-2006.

Familiarizes students with modern developmental biology and the use of this knowledge to understand common human malformations. Includes lectures on the methodology and model systems of developmental biology; a review of preimplantation development and gastrulation, and embryogenesis/organogenesis. Subsequent lectures focus on the development of organ systems.

Student evaluation: Final exam.

Consent of instructor required.

* Not offered every year as indicated.

315.671* DEVELOPMENTAL BIOLOGY AND HUMAN MALFORMATIONS II. (1 unit). Second term. Departmental faculty. Jointly offered with the National Inst. Health. Next offered 2005-2006.

Familiarizes students with modern developmental biology and the use of this knowledge to understand common human malformations. Includes lectures on the methodology and model systems of developmental biology; a review of preimplantation development and gastrulation, and embryogenesis/organogenesis. Subsequent lectures focus on the development of organ systems.

Student evaluation: Final exam.

Consent of instructor required.

315.701 ADVANCED GENETIC COUNSELING I. (2 units). First term. Biesecker, Barbara. Jointly offered with the National Inst. Health.

This literature-driven course applies interactive genetic counseling techniques to specific settings and client needs. Faculty and students present key issues in client education for various medical specialties, and identify research needs related to genetic counseling. Explores counseling issues through role-play.

Student evaluation: Student evaluation based on class participation, written assignments, and a final essay exam.

Prerequisites: 315.630-631; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.702 ADVANCED GENETIC COUNSELING II. (2 units). Second term. Biesecker, Barbara. Jointly offered with the National Inst. Health.

This literature-driven course applies interactive genetic counseling techniques to specific settings and client needs. Faculty and students present key issues in client education for various medical specialties, and identify research needs related to genetic counseling. Explores counseling issues through role-play.

Student evaluation: Student evaluation based on class participation, written assignments, and a final essay exam.

Prerequisites: 315.701; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

317.600 INTRODUCTION TO THE RISK SCIENCES AND PUBLIC POLICY. (3 units). First term. Burke, Thomas. Jointly offered with the Department of Environmental Health Sciences and the Department of Epidemiology.

Provides an introduction to the basic paradigm for quantitative risk assessment and illustrates its application in the public policy process using case studies. Examines risk assessment in a broad societal context, considering social, economic, and political factors that affect risk decision-making; evolution of risk assessment; and the use of risk assessment in regulatory processes. Students complete a risk assessment exercise.

Student evaluation: Student evaluation based on class participation and assignments.

317.605 METHODS IN QUANTITATIVE RISK ASSESSMENT. (4 units). Third term.

Ettinger, Adrienne.

Builds the quantitative skills necessary to evaluate and conduct risk assessment as well as to understand its strengths and weaknesses. Students learn and apply exposure assessment, dose-response relationships, uncertainty evaluation, and the qualitative and quantitative characterization of risk. Case studies illustrate the implications of various exposure and dose-response approaches for final risk assessment. Laboratory exercises include the use of risk software.

Student evaluation: Class participation and assignments.

Prerequisites: 317.600; 187.610; 140.622; 340.601; consent of instructor.

317.610 RISK POLICY, MANAGEMENT AND COMMUNICATION. (3 units). Second term.

Burke, Thomas; White, Ronald. Jointly offered with the Department of Environmental Health Sciences and the Department of Epidemiology.

Provides an in-depth evaluation of the statutes and regulatory policies related to risk management in the US, as well as international examples.

Presents specific statutes and their requirements and application by agencies at federal, state, and local levels, and by the private and public sectors; the application of risk assessment as a management and priority-setting tool and of the role of the risk assessor in the risk-decision process; the societal context of risk assessment, including its public health, political, legal and economic dimensions; and the evolution of risk-based regulatory reform and cost-benefit analysis in public policy-making.

Student evaluation: Student evaluation based on class participation and assignments.

Prerequisites: 317.600.

Consent of instructor required.

317.612 QUANTITATIVE METHODS AND CASE STUDIES IN RISK: EXPOSURE ASSESSMENT. (3 units). Second term.

Burke, Thomas; Schwab, Margo. Jointly offered with the Department of Environmental Health Sciences and the Department of Epidemiology.

Teaches the quantitative skills necessary to model population distributions of human exposure to chemical, microbiological, and physical hazards for use in risk assessment. Environmental substances with complex pathways of exposure, including dermal contact, inhalation, and ingestion are used as examples. Case studies are used to highlight the implications of various exposure assessment approaches for final risk characterization. This course may be taken either before or after the partner course (317.613) that focuses on dose-response assessment.

Student evaluation: Student evaluation based on two or three case study assignments and a final exam.

Prerequisites: 317.600, 340.601, 187.610, 140.622.

Consent of instructor required.

317.613 QUANTITATIVE METHODS AND CASE STUDIES IN RISK: DOSE RESPONSE.

(3 units). Third term. Burke, Thomas; Schwab, Margo. Jointly offered with the Department of Environmental Health Sciences and the Department of Epidemiology.

Teaches the quantitative skills necessary to estimate population-level human health effects associated with low-level exposures to chemical, microbiological, and physical hazards. Provides students with hands-on experience modeling dose-response relationships from limited toxicological and epidemiological data. Case studies are used to teach and highlight the implications of the dose-response assessment for final risk characterization. This course may be taken either before or after the partner course (317.612) that focuses on exposure assessment.

Student evaluation: Student evaluation based on two or three take home assignments and a final exam.

Prerequisites: 317.600, 340.601, 187.610, 140.622.

Consent of instructor required.

317.615 TOPICS IN RISK ASSESSMENT. (2 units). Fourth term. Burke, Thomas; White, Ronald. Jointly offered with the Department of Environmental Health Sciences and the Department of Epidemiology.

Using a case-study approach, students critique risk assessments drawn from faculty experiences and analyze factors leading to specific risk decisions. Covers contemporary issues and classic risk assessments.

Student evaluation: Student evaluation based on class participation and assignments.

Prerequisites: 317.600, 317.605, 317.610.

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

The following courses each have a distinct use in master's, doctoral, or postdoctoral studies. All require consent of the student's advisor; special studies courses also require consent of instructor. Students should register for the appropriate course in their division.

Field Placement is an individual program of field observation, practice, and/or field research. Students work under the direction of a faculty advisor and may also work with an agency preceptor, where appropriate. Field study sites may include hospitals, health departments, regulating and planning agencies, labor unions, health insurers, and other similar locations.

Thesis Research generally is taken once the student has passed the Schoolwide preliminary oral exam.

Postdoctoral Research is for students pursuing postdoctoral studies with a faculty advisor.

Special Studies and Research is for individual and group studies exclusive of thesis and field work.

300.800 MPH CAPSTONE HEALTH POLICY AND MANAGEMENT. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

300.840 SPECIAL STUDIES AND RESEARCH IN HPM FOR MPH CANDIDATES. (variable units). First, second, third and fourth terms.

300.861 GRADUATE SEMINAR IN HEALTH POLICY AND MANAGEMENT. (1 unit). First term. Shi, Leiyu.

Presents an overview of the doctoral program in preparation for the departmental core doctoral requirements.

Student evaluation: Student evaluation based on critiques of current literature.

300.870 THE RESEARCH AND PROPOSAL WRITING PROCESS I. (2 units). First term. Gielen, Andrea; Starfield, Barbara.

Assists doctoral students in preparing their dissertation proposal through presentations on their progress and faculty lectures on relevant topics, such as identifying research questions and writing hypotheses; reviewing the literature; sources of funding; protocol construction; and the Committee on Human Research.

Student evaluation: Student evaluation based on class participation and progress made on the proposal.

300.871 THE RESEARCH AND PROPOSAL WRITING PROCESS II. (2 units). Second term. Gielen, Andrea; Starfield, Barbara.

Assists doctoral students in preparing their dissertation proposal through presentations on their progress and faculty lectures on relevant topics, such as identifying research questions and writing hypotheses; reviewing the literature; sources of funding; protocol construction; and the Committee on Human Research.

Student evaluation: Student evaluation based on class participation and progress made on the proposal.

Prerequisites: 300.870.

Health and Public Policy

301.820 THESIS RESEARCH HEALTH AND PUBLIC POLICY. (variable units). First, second, third and fourth terms.

301.830 POSTDOCTORAL RESEARCH HEALTH AND PUBLIC POLICY. (variable units). First, second, third and fourth terms.

301.840 SPECIAL STUDIES & RESEARCH HEALTH AND PUBLIC POLICY. (variable units). First, second, third and fourth terms.

301.861 GRADUATE SEMINAR IN HEALTH AND PUBLIC POLICY. (2 units). First, second, third and fourth terms. Frattaroli, Shannon.

Reviews and critiques current literature in health and public policy and evaluates studies from a methodological and conceptual basis.

Student evaluation: Student evaluation based on critiques of current papers.

301.865 SEMINAR IN HEALTH AND HUMAN RIGHTS. (1 unit). First, second and third terms. Lawrence, Robert. Former course number 550.869.

Focuses on human rights and relationships between health and human rights. Topics include: (1) international instruments defining human rights and their application with a review of the philosophical and historical origins of these instruments; (2) the interdependency of health and human rights; (3) detailed examination of recent human rights abuses at the individual and population level; (4) human rights violations as they particularly impact health and health care; and (5) the many roles for health professionals in the documentation and amelioration of human rights violations.

Student evaluation: Student evaluation is based on occasional assignments of less than 300 words, class participation, and a written assignment of approximately 1000 words.

Prerequisites: Participation in the second and third term requires participation in the preceding term's seminar.

303.861 GRADUATE SEMINAR IN COMMUNITY-BASED RESEARCH. (1 unit). First, second, third and fourth terms. Bone, Lee; Bowie, Janice; Farfel, Mark.

Explores faculty-community partnership in community-based research (CBPR), education, and practice. Seminar topics may include CBPR principles and ethics, coalition and partnership building, implementation, dissemination, translation and sustainability, media and marketing, advocacy, policy, cultural diversity, collaborative grant writing, and publishing. Speakers include faculty, Kellogg scholars, and community patrons. This seminar is open to all divisions in the University and community.

Student evaluation: Evaluations based on class participation and completion of written assignment.

305.861 GRADUATE SEMINAR IN INJURY RESEARCH AND POLICY. (1 unit). First, second, third and fourth terms. Cullinane, Sharon.

Students attend weekly seminars offered by the Center for Injury Research and Policy and read literature provided to accompany each presentation. Seminar topics complement the content areas of current courses and include themes of global perspectives in injury control, contemporary thoughts in violence prevention, advanced methods in injury research, and updates in trauma and rehabilitation research. The last week of each course is devoted to an in-depth discussion of the terms' seminars.

Student evaluation: Student evaluation based on brief critiques of the seminars and class participation.

306.861 GRADUATE DOCTORAL SEMINAR IN BIOETHICS. (1 unit). First, second, third and fourth terms. Kass, Nancy.

Familiarizes students with contemporary and classic literature in bioethics and demonstrates how to rigorously critique empirical and normative writings in the field of bioethics. Readings for the seminar include recent publications in bioethics and some classic pieces in the field. Students are primarily responsible for selection of articles and for presentation of articles for discussion.

Student evaluation: Students will research and prepare a scholarly paper on a relevant topic of their choice that includes the production of a thesis statement, outline, and final draft. Students must also present their paper topic during latter classes.

Prerequisites: There is no formal prerequisite for the course, although it is recommended that students have taken Public Health and the Law, 306.650, Ethical Issues in Public Health, 306.655, and/or Legal and Ethical Issues in the Evolving Health Care System, 306.663.

Consent of instructor required.

306.863 GREENWALL SEMINAR SERIES. (1 unit). First, second, third and fourth terms. Faden, Ruth.

Explores the history of bioethics in the U.S. by examining its effects on health policy. Readings and discussion focus on federal commissions, federal and state court decisions, the ethics committee movement, federal and state regulations, professional organizations, and grassroot bioethics movements. Students meet with policy makers and scholars in bioethics and health policy.

Student evaluation: Student evaluation based on class participation and presentations

Consent of instructor required.

Social and Behavioral Sciences

302.820 THESIS RESEARCH SOCIAL AND BEHAVIORAL SCIENCES. (variable units). First, second, third and fourth terms.

302.830 POSTDOCTORAL RESEARCH SOCIAL AND BEHAVIORAL SCIENCES. (variable units). First, second, third and fourth terms.

302.840 SPECIAL STUDIES AND RESEARCH SOCIAL AND BEHAVIORAL SCIENCES. (variable units). First, second, third and fourth terms.

302.861 GRADUATE SEMINAR IN SOCIAL AND BEHAVIORAL SCIENCES. (2 units). Third and first terms. Curbow, Barbara; Wissow, Lawrence. Former course number 306.861.

Reviews and critiques current literature in the behavioral sciences and evaluates studies from a methodological and conceptual basis.

Student evaluation: Student evaluation based on critiques of current papers.

Consent of instructor required.

303.810 FIELD PLACEMENT BEHAVIORAL SCIENCES AND HEALTH EDUCATION -- MHS. (variable units). First, second, third and fourth terms.

303.840 SPECIAL STUDIES AND RESEARCH BEHAVIORAL SCIENCES AND HEALTH EDUCATION -- MHS. (variable units). First, second, third and fourth terms.

303.865 M.H.S. SEMINAR IN HEALTH EDUCATION AND HEALTH

PROMOTION. (1 unit). First term. McDonald, Eileen.

Introduces a variety of topics important to the profession of health education and health promotion, including both historical and current issues. Presents role definitions and competencies, health education certification, professional organizations representing the field, and other health education and promotion resources.

Prepares students for the field placement requirement in the second year of the program.

Student evaluation: Student evaluation based on class participation and a written assignment.

Consent of instructor required.

303.866 CAREERS IN HEALTH EDUCATION AND HEALTH

PROMOTION. (1 unit). Second term. McDonald, Eileen.

Introduces a variety of settings in which health education, promotion, and communication work takes place, including but not limited to local, state, and federal government agencies, voluntary health agencies, educational institutions, and consulting firms. Describes health education, promotion, and communication projects, programs, and campaigns covering a wide array of health topics.

Student evaluation: Evaluation based on class participation and a written assignment.

Prerequisites: MHS students in BSHE and students pursuing certificate in Health Education.

Consent of instructor required.

M.H.S.-Health Policy

308.810 FIELD PLACEMENT HEALTH

POLICY-MHS. (variable units). First, second, third and fourth terms.

308.840 SPECIAL STUDIES AND RESEARCH

HEALTH POLICY-MHS. (variable units). First, second, third and fourth terms.

308.867 M.H.S. SEMINAR IN HEALTH

POLICY. (1 unit). First, second, third and fourth terms. Sleicher, Dana.

Introduces work undertaken in health policy settings and prepares M.H.S. students in Health Policy and Management for the field placement requirement in the second year of the program.

Student evaluation: Student evaluation based on class participation and written assignments.

Consent of instructor required.

Health Services Research

309.820 THESIS RESEARCH HEALTH

SERVICES RESEARCH. (variable units). First, second, third and fourth terms.

309.830 POSTDOCTORAL RESEARCH

HEALTH SERVICES RESEARCH. (variable units). First, second, third and fourth terms.

309.840 SPECIAL STUDIES AND RESEARCH

HEALTH SERVICES RESEARCH. (variable units). First, second, third and fourth terms.

309.861 GRADUATE SEMINAR IN HEALTH

SERVICES RESEARCH. (2 units). First term. Anderson, Gerard.

Provides opportunity to learn about faculty research, review current literature, discuss issues and concepts relevant to the field of health services research, and prepare for comprehensive exams and proposal writing. Intended for doctoral students concentrating in health services and outcomes research or gerontology and long-term care.

Student evaluation: Student evaluation based on class participation.

Consent of instructor required.

309.862 ADVANCED GRADUATE SEMINAR

IN HEALTH SERVICES RESEARCH. (2 units). First term. Anderson, Gerard.

Reviews and critiques current literature in the health services research field from a methodological and conceptual basis.

Student evaluation: Student evaluation based on class participation.

312.810 FIELD PLACEMENT HEALTH

FINANCE AND MANAGEMENT-MHS.

(variable units). First, second, third and fourth terms.

312.840 SPECIAL STUDIES AND RESEARCH HEALTH FINANCE AND MGMT-MHS.

(variable units). First, second, third and fourth terms.

312.867 MHS SEMINAR IN HEALTH FINANCE AND MANAGEMENT. (2 units).

First and second terms. Shiloh, Donna.

Introduces health finance and management health care settings and prepares MHS students for the field placement requirement in the second year of the program. Student evaluation is based on class participation and written assignments.

Student evaluation: Class participation and written assignments.

Consent of instructor required.

Genetic Counseling

315.820 THESIS RESEARCH: GENETIC COUNSELING. (variable units). First term.

Jointly offered with the National Inst. Health.

315.840 SS/R: GENETIC COUNSELING.

(variable units). First term. Jointly offered with the National Inst. Health.

315.851 SUPERVISED CLINICAL ROTATIONS: GENETIC COUNSELING. (4 units).

First, second, third and fourth terms. Biesecker, Barbara. Jointly offered with the National Inst. Health.

Clinical placements in adult, pediatric, and prenatal genetic centers in the Baltimore-Washington area provide opportunity to learn about genetic conditions by their impact on individuals and their families, and about roles of the genetic counselor. Individual rotations are scheduled to achieve a wide range of clinical experiences.

Student evaluation: Student evaluation based on preceptor evaluation.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.861 GENETIC COUNSELING SEMINAR: TOPICS IN THE FIELD. (2 units).

First, second, third and fourth terms. Biesecker, Barbara. Jointly offered with the National Inst. Health.

Case discussions highlight psychological, social, and ethical issues in genetic counseling. Review of recent relevant literature enhances critical thinking skills. Clients who have had personal experiences with a genetic condition or risk expose students to a variety of reactions and circumstances presented from the consumers perspective. Various professionals share services, research, and expertise relevant to genetic counselors. Students in related graduate or medical genetics programs are encouraged to enroll to maximize the opportunity for exchange between disciplines.

Student evaluation: Student evaluation based on class participation, critical analysis of literature, and journal review.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.866 CURRENT TOPICS IN

MOLECULAR GENETICS. (1 unit). Third and fourth terms. Departmental faculty. Jointly offered with the National Inst. Health.

Reviews current research in molecular genetics, exploring specific molecular techniques and applications. Students critically assess research results in assigned papers to determine their application to genetics medicine and genetic counseling.

Student evaluation: Student evaluation based on two oral presentations and class participation.

Prerequisites: 315.610-.613; Must be enrolled in ScM in Genetic Counseling Program.

Consent of instructor required.

315.870 GENETIC COUNSELING CLINICAL SUPERVISION. (1 unit). First, second, third and fourth terms. Biesecker, Barbara. Jointly offered with the National Inst. Health.

Individual supervision sessions assist the student in recognizing the impact of personal styles and biases on the counseling process. Uses audiotapes and/or videotapes of student counseling sessions to review, analyze, and process student-client interactions throughout the students clinical rotations, and develop strategies for addressing barriers in the counseling process.

Student evaluation: Student evaluation based on participation and presentation of weekly case summaries.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program; students must register for four terms.

Consent of instructor required.

315.880 GENETIC COUNSELING PROGRAM THESIS PROPOSAL DEVELOPMENT I.

(2 units). First term. Rimal, Rajiv. Jointly offered with the National Inst. Health.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program; Students must register for 4 terms.

Consent of instructor required.

315.881 GENETIC COUNSELING PROGRAM THESIS PROPOSAL DEVELOPMENT II.

(2 units). Second term. Rimal, Rajiv. Jointly offered with the National Inst. Health.

Prerequisites: Must be enrolled in ScM in Genetic Counseling Program; students must register for four terms.

Consent of instructor required.

COURSES JOINTLY OFFERED WITH OTHER DEPARTMENTS

180.631 ENVIRONMENTAL AND OCCUPATIONAL HEALTH POLICY SEMINAR. See Department of Environmental Health Sciences.

221.607 CASE STUDIES IN HEALTH POLICY AND FINANCING. See Department of International Health.

221.609 INTERNATIONAL HEALTH REFORM. See Department of International Health.

221.612 CONFRONTING THE BURDEN OF INJURIES:A GLOBAL PERSPECTIVE. See Department of International Health.

221.640 CHILDREN IN CRISIS. See Department of International Health.

221.722 QUALITY ASSURANCE MANAGEMENT METHODS FOR DEVELOPING COUNTRIES. See Department of International Health.

223.671 PUBLIC HEALTH SURVEILLANCE: METHODS AND APPLICATIONS. See Department of International Health.

340.615 TOBACCO CONTROL: NATIONAL AND INTERNATIONAL APPROACHES. See Department of Epidemiology.

340.717 HEALTH SURVEY RESEARCH METHODS. See Department of Epidemiology.

380.633 THEORY AND RESEARCH IN HEALTH COMMUNICATION. See Department of Population and Family Health Sciences.

**INTERDEPARTMENTAL
MANAGEMENT SEQUENCE - SEE
DEPARTMENT OF
INTERNATIONAL HEALTH**

551.601 MANAGING HEALTH SERVICES ORGANIZATIONS. (4 units). First term. Gundlach, Ann-Michele; Peters, David; Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of International Health. Former course number 312.612.

Provides an introduction to managing and leading health services organizations based on the JHSPH Leadership and Management Paradigm. Within this paradigm, the stated purpose of the organization is achieved by applying leadership skills to influence people and institutions, and managing resources within a framework of principles, people, processes and organizational design. Major topics include: the healthcare environment and its organizational implications; creating a shared mission, vision and values; developing measurable goals and objectives; organizational design and structure; public participation in health service organizations; patient safety and ethical principles; communication; human resource management; continuous process improvement and measuring and monitoring organizational performance.

Student evaluation: Based on student exercises.

Prerequisites: Introduction to Online Learning.

551.602 EXERCISES IN MANAGING HEALTH SERVICES ORGANIZATIONS. (2 units). First term. Peters, David; Ward, William. Jointly offered with the Department of International Health.

Explores a variety of settings in which to apply concepts learned in the course "Managing Health Services Organizations". Examines the following: (1) organizational design and how to evaluate an organization from the perspectives of open systems, (2) community-focused strategic management, (3) perspectives of key stakeholders and ways organizations meet their expectations, (4) governance in healthcare organizations, (5) the role of conflict in healthcare organizations, (6) preparing, implementing, and communicating a budget that is based on limited resources within a business, (7) performance improvement concepts and tools in a healthcare organization, and (8) the construct of a "balanced score card" for a healthcare organization.

Student evaluation: Student evaluation based on group exercises and class participation.

551.603 FUNDAMENTALS OF BUDGETING AND FINANCIAL MANAGEMENT. (3 units). Second term. Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of International Health. Former course number 312.619.

Explains the role of budgeting as a key component of the administrative process. Students learn to develop a budget and evaluate the financial status of a department or operating unit and determine what, if any, corrective actions need to be taken. Presents various analytical methods in management decision making, including benefit/cost ratio analysis, variance analysis, and break-even analysis. Also includes approaches to benchmarking, productivity improvement techniques, and methods for building cost standards.

Student evaluation: Method of student evaluation based on midterm exam, final exam, and participation.

Prerequisites: Introduction to Online Learning.

551.604 QUANTITATIVE TOOLS FOR MANAGERS. (3 units). Second term. Reinke, William; Steinwachs, Donald. Jointly offered with the Department of International Health. Former course number 312.641.

Provides current and future managers in health care with an operational understanding of quantitative models to support decisions on resource allocation. Learning objectives include: to develop an understanding of the process of quantitative modeling; to stimulate critical thinking about operational issues in a system; to introduce spreadsheet modeling and simulation as quantitative decision support tools; to identify classes of operations research problems and general approaches to support decisions, such as linear programming, forecasting, decision analysis, scheduling, and inventory control models; to develop a conceptual and computational understanding of these models; and to critically evaluate a published operations research application.

Student evaluation: Homework, case studies and project consisting of an application of an operations research technique covered in the course.

Prerequisites: Intermediate level of Excel competence.

551.605 CASE STUDIES IN MANAGEMENT DECISION-MAKING. (3 units). Third term. Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of International Health. Former course number 221.603.

Students analyze problems and develop strategies based on real dilemmas faced by decision-makers. Students formulate positions before class and actively participate in discussion during class. Cases come from both International and U.S. settings, and deal with issues such as: conflict between budget and program offices, working with governing boards, contracting between government and non-government providers, dysfunctional clinics, reforming hospitals, managing local politics, cutting budgets and collaborating in informal organizations. Develops skills in leadership, negotiation, analysis, and communication.

Student evaluation: Participating in class and written assignments.

Prerequisites: 551.601, 551.602, 551.603, and 551.604.

551.606 STUDIES IN HEALTHCARE LEADERSHIP AND MANAGEMENT. (3

units). Fourth term. Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of International Health. Former course number 221.604.

This is a follow-up course to 551.605 Case Studies in Management Decision-making. Students analyze problems and develop strategies for the policy, financing, and organization of health care organizations and health systems. Students formulate positions before class and actively participate in discussion during class. Cases come from international and U.S. settings, and include decisions for coverage of vulnerable populations, public-private partnerships, policy advocacy over international development assistance, and regulation of private markets. Develops skills in leadership, negotiation, analysis, and communication. Students using the course as a capstone experience develop and present a case study, or prepare a comprehensive analysis of an organization or healthcare issue presented in one of the cases in 551.603 or 551.604.

Student evaluation: Participation in class, written analysis of a case, and preparation and presentation of a case study.

Prerequisites: 551.605.

International Health

The Department of International Health was established in 1961, reflecting long-standing interests of the School and in response to the needs of international agencies and national governments for teaching and research in international health. The department prepares professionals from other countries to assume major positions of leadership and responsibility upon their return home. It also prepares health professionals from the U.S. and other developed countries for roles in international agencies and in collaborative overseas projects. Doctoral level training for research (PhD, ScD) is available in defined fields of specialization in international health. In addition, doctoral level training in public health practice (DrPH) is offered with an emphasis on international health issues. master's level training programs are available in selected areas of professional practice (MHS). Departmental courses may be elected by MPH students with career interests in international health working with the World Health Organization, UNICEF, the World Bank, or other international agencies; national assistance organizations such as the Agency for International Development; and private foundations, voluntary organizations, or firms. In addition to formal courses, seminars are offered throughout the year on topics of current and specialized interest.

ORGANIZATION OF THE DEPARTMENT

The department is organized into four program areas: Health Systems, Disease Prevention and Control, Human Nutrition, and Social and Behavioral Interventions. All faculty and staff have a primary appointment in one of the program areas, but collaborations on research, service, and teaching programs routinely cross these boundaries. The department's academic programs coincide with the major program areas. All students, with the exception of DrPH students, must seek admission to one of these four program areas. The department offers two types of doctoral training: for students interested in research training, the PhD and ScD, and for those interested in public health practice, the DrPH. The PhD and ScD are program-specific, whereas the DrPH is designed to develop senior-level professionals in the broad area of international health. Unlike other doctoral programs in the department, which follow a specific academic program area, the DrPH program provides a comprehensive approach that draws on a variety of academic

disciplines as applied to health problems. Students entering the program should already have substantial public health experience, and ideally should have graduate-level training in the field. The department offers a Master of Health Science degree for students in the Disease Prevention and Control, Health Systems, Human Nutrition, and Social and Behavioral Interventions programs. Graduates of the Disease Prevention and Control program are expected to have acquired technical competence for entry-level positions coordinating disease prevention and control programs or as coordinator of research projects in this area. The Health Systems program prepares graduates to participate in planning, management, and evaluation of developing countries' health programs or projects. Students in the Human Nutrition program focus on public health problems related to nutritional status and dietary intake and gain competence in the design, implementation, and evaluation of nutrition interventions. The Social and Behavioral Interventions program provides students with an understanding of social and cultural issues in the provision of health care in developing countries. Applicants for the MHS degree in International Health should have a prior degree in the biological or health sciences, or a degree in management or the social sciences. Some international health experience is highly desirable. The training program consists of a minimum of four academic terms (64 units) of course work and a two-term practicum (32 units). The practicum can be a full-time activity of four months' duration or a part-time effort extending over a period of up to 12 months. A written comprehensive exam is taken after completion of course work, and a master's essay is produced in connection with the practicum. The practicum builds on knowledge gained during the academic portion of the training. This practical experience provides the student with the opportunity to concentrate in an area of interest, or to try out several different applications to determine more precisely the suitability of different career paths. Internship possibilities range from field projects conducted in developing countries to responsibilities with U.S.-based agencies concerned with international health. Additional academic work or investigations based at the School may be acceptable as an alternative to field work. The student has the principal responsibility for securing the field placement. These arrangements must be approved by the faculty advisor. In the course of the internship, an essay representing a significant contribution to knowledge in the particular area of the student's interest is prepared. With the approval of this School and the School of Advanced International Studies (SAIS), students may enroll in a dual MA/MHS degree program.

Both two-year degrees may be earned in a total of three years by fulfilling certain requirements of SAIS in lieu of the internship year. For more information, see Dual Graduate Degree Programs.

Concurrent Schoolwide Doctoral/Master of Health Science Program in International Health

This program offered by the Department of International Health affords students who are doctoral candidates in other departments who have specific interests in international health the opportunity to obtain a Master of Health Science degree during the course of doctoral studies. A student currently enrolled in a doctoral program in departments other than International Health at the Johns Hopkins Bloomberg School of Public Health may apply to one of the four programs in the Master of Health Science degree program in International Health by submitting application materials to the departmental Admissions Committee. A separate application essay on why the MHS program in International Health is relevant and appropriate to the doctoral candidate's future plans must be submitted. Approval of the primary department chair and the student's doctoral advisor must be documented in the application. Program requirements are the same as those for MHS students in International Health. Students are assigned an International Health advisor in addition to the advisor in the student's primary department. After completion of coursework, students are required to take the departmental comprehensive written examination. The student's doctoral thesis must have some relevance to International Health and will be accepted in lieu of the MHS internship and essay requirements. The MHS degree will be awarded only after completion of all doctoral degree requirements.

Program in Disease Prevention and Control

Director: Donald Burke, MD

Deputy Director for Academic Programs: Joanne Katz, ScD

Assistant Director for Academic Programs:

Karen Charron, MHS

The goals of the Program in Disease Prevention and Control are to understand the epidemiology and etiology of diseases of public health importance in developing countries and vulnerable populations in the U.S., develop new approaches to the detection, prevention, and control of morbidity and mortality in these settings, and to contribute to policy development related to disease control strategies at the national and international level. The diverse faculty includes

physicians, epidemiologists, vaccinologists, and biostatisticians who participate in the full spectrum of research related to prevention and control of disease including laboratory studies in vaccine development and testing; phase I, II, and III clinical trials; community-based prevention trials; observational epidemiologic studies; and clinical outcomes research. Faculty have extensive field experience in developing country settings and have worked in collaboration with international agencies and developing country institutions and colleagues. Collaborative research is ongoing in Bangladesh, Brazil, the Cameroon, Ecuador, Egypt, Ethiopia, the Gambia, Ghana, Guatemala, Haiti, India, Indonesia, Iran, Jamaica, Kenya, Mexico, Myanmar, Nepal, Pakistan, Peru, South Africa, Tanzania, Uganda, Vietnam, Zimbabwe, and in disadvantaged populations in the United States. Faculty members are in full-time residence in Bangladesh, the Cameroon, Ethiopia, Guatemala, Nepal, Peru, and South Africa. The program serves as the home for the Center for Immunization Research and the Institute for Vaccine Safety.

Academic Training in Disease Prevention and Control

For information, contact Ms. Jennifer Shaffer, 410-955-3734, email: jshaffer@jhsph.edu

This program provides training for public health practitioners (MHS) and researchers (PhD) who will use epidemiologic, immunologic, and/or laboratory and statistical methods to design, implement, and/or evaluate disease control interventions for diseases of public health importance to under-served populations. Graduates will have a fundamental understanding of the pathogenesis, epidemiology, and control measures applicable to diseases of public health importance in disadvantaged populations. Interventions to be studied will be primarily biomedical (e.g., therapeutic or prophylactic drugs, vaccines, or environmental modifications), although there may be a behavioral component to effective implementation of such interventions. Special strengths of the program are infectious disease epidemiology (including emerging infections), and vaccinology. Students can acquire a broad understanding of the methods needed to design studies and gain hands-on experience in the design, conduct, and analysis of community and clinical trials and/or laboratory based investigations, including the immunologic and biologic basis of responses to immunizations and other prophylactic or therapeutic interventions. Master of Health Science candidates should have a strong undergraduate background in biology and/or the quantitative sciences. Doctoral candidates should have a degree in medicine, veterinary medicine, or

dentistry; or a master's level degree or equivalent graduate training in epidemiology, statistics, international health, tropical medicine, microbiology, parasitology, immunology, mycology, or virology. Prior work experience is preferable.

Advising faculty: Drs. Black, Bourgeois, Burke, Burnham, Chaisson, Charron, Coberly, Durbin, Gilman, Halsey, Harro, Karron, Katz, Morrow, Moss, Moulton, Nachega, Nelson, K. O'Brien, Pierce, Quinn, Ruff, B. Sack, D. Sack, Santosham, Sazawal, Steinhoff, Tielsch, and Zenilman.

Program in Health Systems

Director: Mathuram Santosham, MD, MPH Deputy Director for Academic Programs: David Peters, MD, DrPH

The Program in Health Systems is dedicated to providing excellence in graduate education, professional development, research, and partnerships between health professionals, institutions, governments, and the communities they serve to build and utilize capacity in (a) health policy; (b) health planning, management, and evaluation; (c) public health education; (d) institution building; (e) community development; and (f) research in organization, financing and management of health systems, to improve the performance of health systems around the world.

The program serves to bring together people and ideas to create and use knowledge, build leadership and management skills, and foster innovation in health systems. The Health Systems Program fulfills its particular mission through teaching, research and service at the Bloomberg School of Public Health and with partners around the world, particularly in low- and middle-income countries and among vulnerable populations. Areas of concentration for the Health Systems Program include: (1) measurement of performance of health systems; (2) national health policy and planning; (3) health financing systems; (4) Management of health programs; (5) district health management; (6) quality assurance; (7) populations stressed by economic, social, and political crisis, including conflict and natural disaster; (8) poverty and health relationships; (9) demand for health services; (10) public-private partnerships in health; (11) injury prevention and control; and (12) neonatal and child health.

The program is organized around the belief that health systems should improve people's health status, reduce financial risks of illness, and satisfy people's expectations of their health services. Our vision is that health systems should achieve these goals by:

- Promoting equity in health services and health

outcomes

- Protecting vulnerable and under-served populations
- Contributing to poverty reduction
- Enabling communities to help themselves
- Responding to needs of populations
- Respecting the rights of individuals and communities, and diversity in beliefs and practices
- Building partnerships between local institutions, governments, and international agencies
- Engaging with other sectors of civil society and government
- Being accountable to beneficiaries and other stakeholders
- Using cost-effective and sustainable health service strategies and institutions
- Creating and using new knowledge
- Continuously innovating and learning

The program serves as the home for the Center for International Emergencies, Disaster, and Refugee Studies and the Center for American Indian Health.

Academic Training in Health Systems

For information, contact Ms. Jennifer Shaffer, 410-955-3734, e-mail: jshaffer@jhsph.edu

Academic training is offered at both the master's and doctoral levels. Graduates of the program will have the competencies to play leadership roles in (a) health policy; (b) health planning, management, and evaluation; (c) public health education; (d) institution building; and (e) community development in a variety of settings, from community to national and international levels. Students may choose from two streams of courses within the Health Systems Program:

1) Health Management and Administration. This stream is targeted at developing skills, knowledge and attributes of health managers working in low- and middle-income countries and with disadvantaged populations. The curriculum focuses on planning, implementation, monitoring and evaluation of projects, health facilities, and community and district approaches.

2) Health Policy and Financing. This stream is aimed at developing the skills, knowledge, and attributes of those who play a role in policy and senior management of health systems in low and middle-income countries and with disadvantaged populations. The curriculum focuses on policy analysis and oversight of national health systems, planning and managing national and international programs, as well as institution building, teaching, and research in these

areas. Research focuses on the performance of health systems, including understanding and intervening in their organization, financing and management.

Opportunities for thesis work include the study of health systems performance, health and poverty, demand for health, health financing alternatives, economic analysis of health programs, private sector analysis, injury prevention and control, and neonatal health programs.

Faculty: Drs. Baker, Burnham, Chotani, Darmstadt, Hyder, Morrow, O'Brien, Peters, Reinke, Robinson, Santosham, Sorkin, Tayback, Taylor, Thorne, Waters, Weiss, and Winch.

Program in Human Nutrition

Director: Benjamin Caballero, MD, PhD

Deputy Director for Academic Programs: Laura Caulfield, PhD

The goals of the Program in Human Nutrition are to develop new practical approaches for the assessment of nutritional status, to improve understanding of the biochemical and metabolic processes associated with nutritional diseases, and to propose effective strategies for the prevention of those diseases. As part of the Department of International Health, faculty in the program focus on issues of under-nutrition in developing countries, and through the Center for Human Nutrition, faculty focus on domestic nutrition issues as well as emerging chronic disease problems in developing countries. The interdisciplinary nature of nutrition is reflected by the diverse faculty, which include physicians, biochemists, epidemiologists, physiologists, anthropologists, and biostatisticians. Beyond their primary specialty, all program faculty have expertise in public health nutrition and in field work in a variety of diverse settings. Current research of program faculty include the determination of protein and energy requirements under varying physiological conditions; studies on the regulation of body weight and energy balance in health and disease; assessment of the biological and sociocultural determinants of nutritional status in the community; effects of micronutrient deficiencies (vitamin A, iron, iodine, zinc) on morbidity, mortality, and reproductive health; design and evaluation of nutritional interventions; feeding of infants and children, and nutrition of women during child-bearing years. International collaborative research is currently taking place in Bangladesh, China, India, Nepal, Peru, Tanzania, Thailand, and Zimbabwe. Faculty are in residence in Bangladesh, Nepal and Zimbabwe.

Academic Training in Human Nutrition

For information, contact Dr. Laura Caulfield, 410-955-2786, email: lcaulfie@jhsph.edu.

The program provides training leading to both the Master in Health Science (MHS) and doctoral (PhD) degrees in Human Nutrition. The objective of the program is to provide students with the scientific foundations and the practical skills to address major nutrition-related public health problems. Through required and elective course work and with the guidance of their academic advisor, doctoral students are able to concentrate in the areas of international nutrition, nutritional biochemistry, nutritional epidemiology, nutritional anthropology, or clinical nutrition. Opportunities for thesis research include the study of maternal and child nutrition, obesity, relationships between diet and chronic diseases, micronutrient deficiencies (with emphasis on vitamin A, iron, calcium, zinc, selenium, and iodine) and nutrition interventions in developing countries, protein-energy metabolism in health and disease, and use of stable isotopes for metabolic research. In the MHS program, students concentrate during the first year on coursework in the core area of public health nutrition, and choose electives in accordance with their intended career path in public health nutrition. During the second year (2 quarters), students complete an internship/field placement designed to provide practical experience in their intended work area. Students in the program plan to pursue careers in management of nutrition and health programs, in the technical content of health promotion disease prevention programs, or go on to doctoral degrees in nutrition (PhD), medicine (MD) or related fields.

Faculty: Drs. Appel, Black, Caballero, Caulfield, Cheskin, Christian, DeLuca, Gittelsohn, Graham, Guilarte, Humphrey, Levander, O'Brien, Paige, Piwoz, Sommer, Treuth, Watkins, and West.

JHU/Cornell University Educational Collaboration in Public Health Nutrition

To enhance the training available in public health nutrition, The Johns Hopkins Bloomberg School of Public Health and Cornell University's Division of Nutritional Sciences are offering students an opportunity to attend courses given at both universities. Graduate students enrolled in a doctoral or master's program at Cornell or at The Johns Hopkins Bloomberg School of Public Health are able to study at the other school for up to one academic year. Students are eligible for the program after they have completed one academic year of study at their home

institution. Tuition is charged by the student's home institution, and information on courses attended at the institution visited are recorded on the student's transcript at the home institution.

Program in Social and Behavioral Interventions

Director: Michael Sweat, PhD

Deputy Director for Academic Programs: Deanna Kerrigan, PhD

The Social and Behavioral Interventions Program conducts research, training, and service on the development, implementation and evaluation of behavioral and community-based public health interventions. Our primary goal is to examine interventions which reflect the social, cultural, and policy context of health problems using a public health perspective, and a sound understanding of the epidemiology of health issues in developing countries. We strive to conduct our work through equitable partnerships with local partners, including affected communities, scientific experts, community and national leaders, and groups conducting intervention work in affected communities.

Academic Training in Social and Behavioral Interventions

The Social and Behavioral Interventions Program offers both Master of Health Science and PhD degrees. This program is designed to provide students a broad exposure to the development and implementation of social and behavioral interventions in developing countries. The curriculum includes exposure to theories of medical anthropology and sociology, and qualitative and quantitative methods for developing and evaluating interventions. Students gain specialized expertise in the development, implementation, and evaluation of disease prevention and control in such areas as HIV prevention, nutritional interventions, malaria control, and a host of other topic areas relevant to the enhancement of health in developing countries. The combined use of qualitative and quantitative methods is a defining characteristic of the program, and students are trained in survey research methods, key-informant interviews, focus group discussions, direct observation, participant observation, social and environmental mapping, and computer-aided management and analysis of qualitative data. Theories covered include psychological, anthropological, and sociological perspectives on the determinants of health and illness, and associated intervention approaches appropriate for developing country settings. Students are also given insight into factors related to gender and health, community-participation in

health programs, and cultural and environmental factors that affect health. For information, contact Ms. Jennifer Shaffer, (410) 955-3734, email:

jshaffer@jhsph.edu

Faculty: Drs. Barlow, Brieger, Celentano, Gittelsohn, Kerrigan, Leonard, Leontsini, Maman, Sweat, and Winch.

Preventive Medicine Residency Program

Residents in the General Preventive Medicine Residency Program may gain expertise in international health by entering the international health track. Residents selected for this track will take a series of courses offered by the Department of International Health during the academic phase of their training, in addition to the courses they take for the Master of Public Health core and for the residency. During the academic year, the resident will be assigned an adviser and will receive guidance and be mentored by the track director designated by the chair of the department. Residents will also be encouraged to be involved in a research project in their area of interest. During the practicum year, residents in the International Health track may be considered for a six-month rotation with PAHO or another appropriately accredited field or research experience. Applicants to the residency program must complete at least one year of clinical training in a program approved by the Accreditation Council for Graduate Medical Education before matriculating in the residency. For more information, contact the residency program at (410) 955-3630 or lmyers@jhsph.edu, or visit <http://www.jhsph.edu/gpmr>.

International Health

Faculty data as of April 1, 2004. For current listing, please click here: <http://faculty.jhsph.edu/IH.cfm>

Robert E. Black, M.D., M.P.H.

Chair of the Department; Professor. *International Health, diarrhea, pneumonia, malaria, measles, malnutrition, infectious diseases.*

James M. Tielsch, Ph.D.

Associate Chair Academic Programs; Professor.

Primary Faculty

Disease Prevention and Control Program

Donald S. Burke, M.D.

Associate Chair and Program Director; Professor. *International Health, Vaccines, viruses, infectious diseases, epidemiology, HIV, AIDS, measles, dengue, smallpox, emerging infectious diseases, bioterrorism, computational models.*

Joanne Katz, Sc.D.

Deputy Director for Academic Programs; Professor. *Epidemiology, ophthalmology, biostatistics, community trials, blindness, visual impairment, glaucoma, cataract, trachoma, refractive error, ocular trauma, vitamin A, iron, zinc, micronutrients.*

Karen R. Charron, R.N., M.P.H.

Assistant Director for Academic Programs; Instructor. *International Health, vaccine clinical trials, informed consent, GCP.*

Aida Abashawl, M.D., M.P.H.

Research Associate. *International Health, HIV, tropical diseases and refugee health.*

Rahel Adamu, M.P.H.

Research Associate. *International health.*

Edwin Jose Asturias, M.D.

Research Associate. *International Health, Guatemala, vaccines, international health, pneumococcus, polio, surveillance, infections.*

Grace Link Barnes, B.S.N., M.P.H.

Research Associate. *International Health.*

Rachel E. Bell, R.N., M.N.S.

Research Associate.

August Louis Bourgeois, Ph.D., M.P.H.

Associate Research Professor. *International Health, Host-parasite relationships and epidemiological factors important in the prevention and control of diarrheal diseases, clinical and field evaluation of vaccines against enteric pathogens.*

Roberta K. Casey, CRNP-Ped, M.S.N.

Research Associate. *International Health, Immunization Research.*

Jacqueline Coberly, M.H.S., Ph.D.

Assistant Scientist. *International Health, Disease Control, Hepatitis and hepatitis B vaccine; AIDS epidemiology and control; tuberculosis control.*

Christian L. Coles, Ph.D., M.P.H.

Assistant Research Professor. *International Health, pediatric infectious diseases, micronutrients, nutrition, pneumonia, pneumococci, antimicrobial resistance.*

Lidia de Moura Propper, M.S.

Research Associate. *International Health, Design and Implementation of Data Systems in Clinical Studies, Data Error and Quality Control Systems – Large Database Design/Control of Web-based systems, Image Data Entry Systems. Simulation and Modeling, Adverse Events Systems – Data Management Design/Implementation of Maternal Infant Vertical Transmission of HIV.*

Erica L. Dueger, D.V.M., Ph.D.

Assistant Scientist. *Pneumococcus, S. pneumoniae, Guatemala, Salmonella.*

Anna P. Durbin, M.D.

Assistant Professor. *International Health, Dengue, Malaria, Parainfluenza, Vaccine.*

Robert H. Gilman, M.D., M.P.H.

Professor. *International Health, Disease control. Diarrheal and other enteric diseases; multidrug-resistant tuberculosis, parasitic infections; management and training for tropical disease prevention and interventions, community-based clinical trial for drugs; climate factors associated with infectious disease in developing countries.*

Neal A. Halsey, M.D.

Professor. *International Health, prevention of infectious diseases with the safest vaccines possible, epidemiological studies of vaccine-preventable diseases and phase I, II, and III vaccine trials of hepatitis B, hepatitis A, inactivated polio virus, pertussis, Haemophilus influenzae type B, tetanus, Lyme disease, rotavirus, Argentina Hemorrhagic Fever, and influenzae vaccine viruses.*

Clayton D. Harro, M.D., M.Sc.

Assistant Scientist. *International Health, preventive HIV vaccines, HPV human papillomavirus vaccines, hepatitis B vaccines.*

Hamidah Farid Hussain, M.B., B.S., M.Sc.

Research Associate. *International Health.*

Ruth Karron, M.D.

Associate Professor. *International Health, Disease Control - CIR, Vaccine development; respiratory viruses; influenza, RSV, parainfluenza, immunity.*

Aamir Javed Khan, M.B.,B.S.

Associate.

Margaret Kosek, M.D.

Assistant Scientist.

Emily Marsh, Ph.D., M.L.S.

Research Associate.

Julie H. McArthur, M.S., B.S.N., R.N.

Research Associate. *HIV, Acute HIV infection, IL-2, Interleukin 2, Hepatitis C, HIV/HCV co-infection.*

William J. Moss, M.D., M.P.H.

Assistant Research Professor. *International Health, Disease Control and Prevention, infectious diseases, impact of HIV epidemic on measles control and eradication, pneumonia, neonatal morbidity and mortality in developing countries, child health in complex emergencies.*

Lawrence H. Moulton, Ph.D.

Professor. *International Health, Biostatistics; Statistical Epidemiology; Longitudinal Data; Bioassay; Group-Randomized Trials; Vaccine Safety; Vaccine Effectiveness; Vitamin A; HIV/AIDS; Landmines.*

Jean B. Nachega, M.D., M.P.H., D.T.M.&H.

Assistant Scientist. *International Health, Disease Prevention & Control - JHU HIV & TB Centers, Infectious Diseases of Public Health Importance, sub-Saharan Africa, HIV/AIDS, Tuberculosis .*

M. Uma Nayak, Ph.D.

Research Associate. *International Health, Community nutrition; data management of clinical studies; project management; data analysis; nutrition surveillance studies; social marketing techniques.*

Katherine L. O'Brien, M.D., M.P.H., F.R.C.P.C.

Associate Research Professor. *International Health, pneumococcus, American Indian, vaccines, group B Streptococcus, group A Streptococcus, Haemophilus influenzae, acute respiratory infections.*

SangKon Oh, Ph.D., M.S.

Research Associate. *International Health, Disease Control - CIR.*

Saad bin Omer, M.B., B.S.

Research Associate. *Cluster Detection, Vaccine Safety, Surveillance of Vaccine Preventable Diseases.*

Nathaniel F. Pierce, M.D.

Professor. *International Health, child health in developing countries, especially diarrheal and respiratory diseases, clinical trials of improved and simplified treatments for acute diarrhea, and of vaccines for diarrheal diseases and respiratory infections.*

Malathi Ram, Ph.D.

Assistant Scientist. *Data Management, Data Quality Control, Public Health, HIV Studies, Vaccine Studies, Cancer Studies.*

Andrea J. Ruff, M.D.

Associate Research Professor. *International Health, Disease control; AIDS and other retroviral infections; immunoparasitology.*

Philip K. Russell, M.D.

Professor Emeritus.

David Sack, M.D.

Professor. *International Health, cholera, rotavirus, diarrhea, Bangladesh, Gates Award, enterotoxigenic Escherichia coli, shigella, International Center, population, epidemiology, oral rehydration solution.*

R. Bradley Sack, M.D., Sc.D.

Professor. *International Health, infectious diarrheal diseases, enterotoxigenic Bacteroides fragilis, cholera, enterotoxigenic E. coli, epidemiology and ecology.*

Daniel A. Salmon, M.P.H.

Assistant Scientist. *International Health, vaccine; immunization; vaccine safety; mandatory immunization.*

Sunil Sazawal, M.B.B.S., Ph.D., M.P.H.

Associate Research Professor. *International Health, Disease Control, Community-based field trials of preventive and therapeutic interventions to improve child health and development; meta-analysis.*

Mark Steinhoff, M.D.

Professor. *Vaccine, immunization, pneumonia, surveillance, pneumococcus, pharyngitis, infectious respiratory disease.*

David Taylor, M.D., M.Sc.

Research Professor. *International Health, diarrheal disease, vaccines, ETEC, shigella, salmonella, campylobacter, typhoid, cholera, traveler's medicine, traveler's diarrhea, biodefense, vaccinia, anthrax vaccine.*

Bhagvanji G. Thumar, M.S., M.T.

Research Associate. *International Health, National Institute of Health, Vaccine Pediatrics, the Center for Immunization Research* conducts human vaccine trials involving a variety of respiratory, gastrointestinal and dengue hemorrhagic fever virus candidate vaccines, enzyme immunoassay for anti-parainfluenza fusion protein.

James M. Tielsch, Ph.D.

Professor. *International Health, epidemiology, blindness prevention, micronutrient malnutrition, developing countries, outcomes research.*

Yukiko Wagatsuma, Dr.P.H., M.D., M.P.H., D.T.M.

Assistant Scientist. *International health, disease control, morbidity measurement, epidemiological investigations in developing countries, vaccine trials, schistosomiasis, dengue hemorrhagic fever, visceral leishmaniasis, malaria, low birth weight, ultrasound, nutrition supplementation, climate change, health systems research, epidemiology, reproductive health, population.*

James Watt, M.D., M.P.H.

Assistant Scientist. *International Health, Center for American Indian Health, Pneumonia, pneumococcal disease, Streptococcus pneumoniae, Haemophilus influenzae, Native American.*

Health Systems Program**Mathuram Santosham, M.D., M.P.H.**

Associate Chair and Program Director; Professor. *Tobacco, International Health, Epidemiologic studies of enteric infections; improved oral rehydration therapy, field testing of vaccines, h. influenzae tybe b, pneumococcal, neonatal health.*

David Peters, M.D., M.P.H., Dr.P.H.

Deputy Director for Academic Programs; Assistant Professor. *International health, health systems, health management, poverty and health, health sector performance, sector wide approaches, case methods, Africa, India, South Asia.*

Richard Allan, M.S.

Research Associate. *International health.*

Timothy D. Baker, M.D., M.P.H.

Professor. *International Health, Health planning, health sector workforce, disease burden to society, injury control, rehabilitation, India, Brazil, Indonesia, and Taiwan, Armenia, Ukraine, Thailand, Sri Lanka, Burma (Myanmar), Peru, Kuwait, Saudi Arabia, China, Pakistan, El Salvador, Nigeria, Ethiopia.*

Abdullah H. Baqui, M.B.B.S., Dr.P.H., M.P.H.

Associate Research Professor. *International Health, Baqui, Bangladesh, ICDDR, B.*

William Brieger, M.P.H., C.H.E.S., Dr.P.H.

Associate Research Professor. *International Health, tropical diseases, health education, community participation, primary health care, training, program evaluation, qualitative methods.*

W. Abdullah Brooks, M.D., M.P.H.

Assistant Scientist. *International Health, Instructor, Institute for International Programs Community Health and Health Systems.*

Gilbert M. Burnham, M.D., Ph.D.

Associate Professor. *International Health, Community Health and Health Systems, Management and evaluation of primary health care, particularly through epidemiological methods.*

Gary L. Darmstadt, M.D., M.S.

Assistant Professor. *International Health.*

Maria Deloria-Knoll, Ph.D.

Assistant Scientist. *International Health, S. Pneumococcus, H. influenzae, clinical trials.*

Anbarasi Edward, Ph.D., M.P.H.

Research Associate. *Quality Assurance, Operations Research, Iron deficiency anemia, IMCI, Child survival.*

Adnan A. Hyder, M.D., Ph.D., M.P.H.

Assistant Professor. *International Health, injury/injuries, violence, burden of disease, ethics, South Asia, East Africa, Pakistan.*

Walter Jones, R.N., M.P.H.

Research Associate. *International Health.*

Henry D. Kalter, M.D., M.P.H.

Associate. *Maternal and perinatal health; verbal autopsy; child mortality surveillance; careseeking and referral constraints; integrated management of childhood illness; antimicrobial resistance.*

Margaret N. Kosek, M.D., M.A.

Assistant Scientist.

Orin S. Levine, M.D., M.P.H.

Associate Research Professor. *Vaccines; international health; respiratory infections; epidemiology.*

Richard Morrow, M.D.

Professor. *International Health, Community Health & Health Systems, Application of epidemiological methods to health systems and quality assurance management methods.*

Farzana Muhib, M.P.H., M.A.

Research Associate.

Kathleen A. Norton, B.A.

Research Associate. *International health.*

Raymond Reid, M.D.

Research Associate. *International Health, Community Health, Health Systems, Epidemiologic studies of enteric infections and Haemophilus influenzae; improved oral rehydration therapy; field testing of vaccines.*

William A. Reinke, Ph.D.

Professor. *International Health, health services research, program evaluation, decision analysis, quality assurance, survey methods, personnel management, functional analysis.*

Paul Seaton, B.A.

Research Associate. *International Health, Health and Child Survival Fellows Program.*

Thomas W. Simpson, M.D.

Associate Professor Emeritus.

Kristen Speakman, M.S.

Research Associate. *International Health, Community health and health systems, domestic and international health promotion/communication projects; examining the intercultural aspects of health research; interaction among researchers and American Indian communities.*

Laura C. Steinhardt, M.P.H.

Research Associate.

Carl E. Taylor, M.D., Dr.P.H.

Professor Emeritus. *Tobacco, International Health, Professor Emeritus, Community Health and Health Systems, Organization of primary health care; community initiatives.*

Hugh R. Waters, Ph.D.

Assistant Professor. *International Health, Health economics, access, equity, costing, health financing, health insurance.*

William Weiss, M.A.

Research Associate. *International Health, Child Survival, Maternal and Child Health, Community Health, Community Development, Health and Management Information Systems, Planning, Monitoring, Evaluation.*

Human Nutrition Program

Benjamin Caballero, M.D., Ph.D.

Associate Chair and Program Director; Professor. *Obesity, pediatrics, malnutrition, international nutrition, International Health, obesity, malnutrition, amino acid metabolism, energy metabolism.*

Laura Caulfield, Ph.D.

Deputy Director for Academic Programs; Associate Professor. *International Health, Pregnancy; perinatal and neonatal disorders; nutritional epidemiology.*

Lawrence J. Cheskin, M.D.

Associate Professor; Director, Johns Hopkins Weight Management Center. *International Health, obesity treatment, weight management, gastroenterology, lifestyle and health.*

Parul Christian, Dr.P.H., M.P.H., M.S.

Associate Research Professor. *International health, epidemiology, vitamin A deficiency, night blindness, nutrient interactions, maternal mortality, infant mortality, anemia, reproductive health, low birth weight, micronutrients, clinical trials.*

Joel Gittelsohn, M.S., Ph.D.

Associate Professor. *Tobacco, International Health, Nutritional anthropology; culture; behavior; dietary patterns; nutrition intervention; obesity prevention; diabetes prevention.*

George G. Graham, M.D.

Professor Emeritus. *International Health, Malnutrition treatment and prevention.*

Phillip Harvey, Ph.D.

Research Associate. *International Health, Human nutrition, micronutrients, vitamin A status, fortification, supplementation, iron status, nutrition policy.*

Jean H. Humphrey, Sc.D., M.S.P.H.

Associate Professor. *International Health, Micronutrient deficiencies and infection; HIV in women and children.*

Tianan Jiang, Ph.D., M.D.

Research Associate. *International Health, Micronutrient research; clinical nutrition research; laboratory assays.*

Rolf Klemm, M.P.H., Dr.P.H.

Assistant Scientist. *International Health, Vitamin A; child growth; maternal nutrition; micronutrient deficiencies; fortification; program evaluation.*

Alain Bernard Labrique, M.H.S., M.S.

Research Associate. *International Health.*

Steven LeClerq, B.A.

Research Associate. *International Health, Human Nutrition, Nepal Nutrition Intervention Project, Vitamin A deficiency; micronutrient deficiency; nutritional epidemiology; clinical and community trials; intervention program evaluation.*

Amy Mitchell, M.S.

Research Associate. *Obesity, weight management, international health.*

Kimberly O. O'Brien, Ph.D.

Associate Professor. *International Health, pregnancy; osteoporosis; calcium, iron and zinc; mass spectrometry, vitamin D, cystic fibrosis, minority health.*

Rebecca Stoltzfus, Ph.D., M.S.

Associate Professor. *International Health, micronutrients; vitamin A; iron; anemia; lactation; pregnancy.*

Jonathan Sugimoto, M.H.S.

Research Associate. *International health.*

Margarita S. Treuth, Ph.D.

Associate Research Professor. *International Health, Obesity; energy metabolism; exercise physiology; body composition; physical activity assessment and interventions in children.*

Keith West, M.P.H., Dr.P.H.

Professor. *International Health, Micronutrients, Vitamin A, Maternal and Child Nutrition, International Nutrition, Nutritional Epidemiology.*

Lee Shu Fune Wu, M.H.S.

Research Associate. *International Health, Human nutrition; survival analysis; analysis of longitudinal studies; vitamin A deficiency.*

Social and Behavioral Interventions Program**Michael D. Sweat, Ph.D.**

Associate Chair and Program Director; Associate Professor. *International Health, Disease Control, HIV/AIDS intervention research; emphasis on HIV counseling and testing, epidemiologic modeling of AIDS epidemics, economic impact assessment; cost-effectiveness analysis of interventions.*

Allison Barlow, M.A.

Research Associate. *International Health, American Indian/Alaskan Native Health.*

Deanna Kerrigan, Ph.D., M.P.H.

Assistant Research Professor. *HIV/STI prevention and care; behavior change; environmental-structural factors; gender; Latin America.*

Lori Leonard, Sc.D.

Assistant Professor. *International Health, Chad, Ethnography, Large-scale infrastructure projects, Longitudinal studies, Oil, Qualitative Research, Reproductive health, Visual methods, Women's health.*

Suzanne Maman, Ph.D., M.H.S.

Assistant Research Professor. *International Health, HIV prevention, HIV Voluntary counseling and testing, violence against women, sub-Saharan Africa, International research ethics.*

Anita Vernekar Shankar, Ph.D., M.S.

Assistant Scientist. *International Health, human nutrition.*

Peter J. Winch, M.D., M.P.H.

Associate Professor. *International Health, Behavior change interventions, community participation, qualitative research methods, vector-borne diseases, malaria, neonatal health, treatment-seeking behavior, compliance with antimicrobial treatment, community health workers, operational research.*

Joint Appointments**Gerard F. Anderson, Ph.D.**

Professor of Health Policy and Management. *Health Policy and Management, Health Care Finance, Chronic Disease, Graduate Medical Education, Hospitals, Academic Medical Centers, Technology Assessment.*

Lawrence Appel, M.D.

Professor of Medicine, School of Medicine.

Chris Beyrer, M.D., M.P.H.

Associate Research Professor of Epidemiology. *HIV/AIDS, molecular epidemiology, human rights, Burma, Thailand, China*

David M. Bishai, Ph.D., M.D., M.P.H.

Associate Professor in the Department of Population and Family Health Sciences. *Population and Family Health Sciences, health economics, population economics; family economics; paternity; polygyny; orphans; adolescent health, vaccines; HIV; AIDS; tuberculosis; meningococcal disease; injury control; human papilloma virus; cervical cancer; health equity; AIDS; Nepal; Uganda; road traffic accidents.*

William Bishai, M.D., Ph.D.

Associate Professor of Medicine, Department of Medicine, School of Medicine. *Molecular Microbiology and Immunology, Impact of Genome Information on Tuberculosis Research.*

Robert Bollinger, M.D., M.P.H.

Professor of Medicine, School of Medicine. *Infectious Diseases, AIDS.*

David Bradt, M.D., M.P.H.

Instructor of Emergency Medicine, School of Medicine. *Disaster Preparedness, disaster management.*

David D. Celentano, Sc.D., M.H.S.

Professor of Epidemiology. *Epidemiology, international health, HIV, AIDS, STDs, behavior, Asia, AIDS prevention.*

Richard E. Chaisson, M.D.

Professor of Medicine, School of Medicine.
Tuberculosis, Infectious Diseases.

Rashid Ahmed Chotani, M.D., M.P.H.

Assistant Professor in the Department of Emergency at the School of Medicine. *International health, infectious disease epidemiology, infection control, nosocomial infections, infectious disease surveillance, influenza, SARS, Monkeypox, bio-terrorism, bio-surveillance, bio-preparedness, Pakistan, Iran, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, Thailand, Former Soviet Republics, refugee health, disaster preparedness.*

Nathan G. Congdon, M.D., M.P.H.

Associate Professor of Ophthalmology at the School of Medicine.

David S. Cooper, M.D.

Professor of Medicine, School of Medicine.
Endocrinology and Metabolism.

Catherine DeAngelis, M.D., M.P.H.

Professor of Pediatrics, School of Medicine.

Michele L. Dreyfuss, Ph.D., M.P.H.

Assistant Research Professor in the Department of Population and Family Health Sciences. *Population and Family Health Sciences, iron deficiency, anemia, pregnancy, pregnancy and perinatal outcomes, micronutrient deficiencies, HIV infection, vertical HIV transmission.*

Charles Flexner, M.D.

Associate Professor of Clinical Pharmacology, School of Medicine.

David S. Friedman, M.D., M.P.H.

Associate Professor in the Department of Ophthalmology at the School of Medicine.

Kevin D. Frick, Ph.D., M.A.

Associate Professor. *Health Policy and Management; cost effectiveness; community interventions; prevention; ophthalmology; nursing.*

Ronald H. Gray, M.B.B.S., M.F.C.M., M.Sc.

Professor of Population and Family Health Sciences. *Population and Family Health Sciences, Epidemiology; STDs; HIV; pregnancy outcome; contraception; lactation; low birthweight; infant mortality; occupational and reproductive health.*

William B. Greenough III, M.D.

Professor of Medicine, School of Medicine.

Tomás Guilarte, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences; Neurotoxicology; lead neurotoxicity/NMDA receptor/learning and memory; manganese neurotoxicity; biomarkers of brain injury/Parkinson's disease; brain imaging/positron emission tomography/magnetic resonance imaging and spectroscopy.*

Bernard Guyer, M.D., M.P.H.

Professor of Population and Family Health Sciences. *Maternal and child health, children's health, children's development, infant mortality, immunization, community pediatrics, childhood injury, preventive health, public health, Title V, state health agencies, disparities in children's health, Population and Family Health Sciences.*

Jane L. Halpern, M.D., Dr.P.H.,M.P.H.

Research Associate in the Department of Medicine, School of Medicine and Director of Health Services at Towson University.

Z. Leah Harris, M.D.

Assistant Professor of Anesthesiology and Critical Care Medicine, School of Medicine. *Iron metabolism.*

Jennifer A. Haythornthwaite, Ph.D.

Associate Professor in the Department of Psychiatry and Behavioral Sciences, School of Medicine.

Noreen A. Hynes, M.D., M.P.H.

Assistant Professor in the Division of Infectious Diseases, School of Medicine.

Jay Brooks Jackson, M.B.A.

Professor in the School of Medicine.

Gilbert M. Khadiagala, Ph.D.

Associate Professor of Comparative Politics and African Studies, School of Advanced International Studies.

Marjorie Koblinski, Ph.D.

Senior Scientist in the Department of Population and Family Health Sciences.

Paul Ladenson, M.D.

Professor of Medicine and Pathology, School of Medicine. *Endocrinology, metabolism.*

Yukari Carol Manabe, M.D.

Assistant Professor in the Division of Infectious Diseases in the Department of Medicine, School of Medicine.

Robin McKenzie, M.D.

Assistant Professor in the Department of Medicine, School of Medicine.

W. Henry Mosley, M.D., M.P.H.

Professor of Population and Family Health Sciences. *Population and Family Health Sciences, population change, health policy, demographic and epidemiological change, developing countries, health transition, disease control priorities, child survival, family planning, international health, distance education.*

Vicente Navarro, M.D., D.M.S.A., Dr.P.H.

Professor of Health Policy and Management. *Health Policy and Management, public policy, health policy, international health, sociology, policy studies.*

Kenrad Nelson, M.D.

Professor of Epidemiology. *Epidemiology, HIV/AIDS, tropical medicine, leprosy, nosocomial infections, hepatitis, infections in drug users, and tuberculosis.*

Eric L. Nuermberger, M.D.

Assistant Professor in the School of Medicine.

Randall M. Packard, Ph.D.

William H. Welch Professor of the History of Science, Medicine and Technology at the Krieger School of Arts and Sciences. *International health.*

David M. Paige, M.D., M.P.H.

Professor of Population and Family Health Sciences.

Jonathan A. Patz, M.D., M.P.H.

Assistant Professor in the Department of Environmental Health Sciences. *Environmental Health Sciences, Air Pollution, Deforestation, Dengue Fever, Ecosystem, El Niño, Geographic Information Systems (GIS), Global Climate Change, Greenhouse Warming, Heat Mortality, Integrated Assessment, Land use, Malaria, Modeling, Remote sensing, Vector-borne diseases, Water-borne Diseases.*

Fernando P. Polack, M.D.

Assistant Professor of Pediatrics, School of Medicine. *RSV-measles-paramyxovirus-vaccines.*

Thomas C. Quinn, M.D., M.S.

Professor of Medicine, School of Medicine.

Terence H. Risby, Ph.D.

Professor of Environmental Health Sciences. *Environmental Health Sciences, tissue injury and disease; liver and kidney cellular injury; oxidative stress in humans, obesity, breath biomarkers of disease, breath biomarkers of tissue injury, breath biomarkers of exposure, molecular basis of lung injury, airborne particulate matter, phagocytosis.*

Alan L. Robin, M.D.

Associate Professor of Ophthalmology, School of Medicine.

David H. Schwartz, M.D., Ph.D.

Associate Professor of Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, Immune Response and Viral Evolution in Seroconverters and Long-Term Non-Progressors, and HAART-Treated Patients, HIV Experimental Vaccine Evaluation.*

Alan L. Scott, Ph.D.

Professor of Molecular Microbiology and Immunology. *Molecular Microbiology and Immunology, parasitic nematodes, biology, infections, parasites, filarial nematodes, asthma, allergy, gene expression analysis, genomics.*

Richard Semba, M.D., M.P.H.

Associate Professor of Ophthalmology, School of Medicine. *Molecular Microbiology and Immunology, vitamin A, relationship of nutrition to immunity and infection, history of nutrition.*

Jeffrey M. Smith, M.D., M.P.H.

Assistant Professor in the Department of Gynecology and Obstetrics in the School of Medicine.

Alfred Sommer, M.D., M.H.S.

Professor of Epidemiology. *Epidemiology, international health, ophthalmology, vitamin A, blindness prevention, glaucoma, visual disorders, micronutrients, clinical guidelines.*

Steffanie A. Strathdee, Ph.D., M.S.

Associate Professor of Epidemiology. *Epidemiology, HIV/AIDS, Hepatitis C, vaccines, prevention, interventions, injection drug users, access to care, needle exchange programs.*

Paul Talalay, M.D.

John Jacob Abel Professor of Pharmacology in the School of Medicine. *Molecular mechanisms of chemoprotection against carcinogens; enzymology of steroid hormones.*

Michael J. Van Rooyen, M.D., M.P.H., F.A.C.E.P.

Associate Professor. Department of Emergency Medicine, School of Medicine. *International Health.*

John T. Walkup, M.D.

Associate Professor in the Division of Child and Adolescent Psychiatry, School of Medicine.

Paul Watkins, M.D., Ph.D.

Professor of Neurology, School of Medicine.

Lawrence S. Wissow, M.D., M.P.H.

Associate Professor of Health Policy and Management. *Health Policy and Management, primary care, mental health, children, physical punishment, suicide.*

Frank R. Witter, M.D.

Associate Professor Obstetrics and Gynecology,
School of Medicine.

Nathan D. Wolfe, Sc.D.

Assistant Professor. *Bushmeat, AIDS, zoonosis, Molecular epidemiology, pathogen ecology and evolution, cross-species transmission, primatology, Cameroon, Central Africa, phylogenetics, GIS, international health, RNA virus, evolution, retrovirus, arbovirus, filovirus, monkeypox, malaria, ebola, lassa, marburg, dengue, yellow fever, leptospirosis, rabies, spumaretrovirus, simian foamy virus (SFV), SIV, HIV, STLV, HTLV, hepatitis.*

Albert W. Wu, M.D., M.P.H.

Associate Professor in the Department of Health Policy and Management. *Health Policy and Management, quality of life, outcomes research, quality of care, medical error, HIV/AIDS, clinical trials, asthma, end-stage renal disease, intensive care.*

Jonathan M. Zenilman, M.D.

Professor of Medicine, School of Medicine.
Infectious Diseases, AIDS, Sexually Transmitted Diseases, STDs, Hospital Epidemiology, HIV prevention.

Departmental Affiliates**Saade A. Abdallah, M.B.Ch.B., M.P.H.**

Associate.

Olusoji Adeyi, M.B.B.S., Dr.P.H.

Adjunct Assistant Professor. *International health, health systems; disease control; HIV/AIDS; post-conflict reconstruction and development; quality assurance; health outcomes; Africa; Eastern Europe and Central Asia; Albania, Bosnia-Herzegovina, Nigeria, Romania, Russia.*

Halida Hanum Akhter, M.B.B.S., Dr.P.H.,M.P.H., M.C.P.S.

Senior Associate. *Maternal health, Reproductive Health.*

Marco Albonico, M.D., Ph.D.

Adjunct Associate Professor. *International health.*

C. Alex Alexander, M.D., M.P.H., Dr. P.H., FACHE, FACPM

Associate.

Penny S. Altman, M.L.S.

Associate.

Fabiana Piovesan Alves, M.D.

Associate.

Lori Arviso Alvord, M.D.

Associate.

Karen Angelica, M.P.P

Associate.

Shams El Arifeen, M.B.B.S., Dr.P.H.,M.P.H.

Associate.

Lewellys Barker, M.D., M.P.H.

Senior Associate.

O. Massee Bateman Jr., M.D.

Associate.

Caryn Bern, M.D., M.P.H.

Associate.

Karabi Bhattacharyya, Sc.D.

Assistant Professor. *International health.*

Maureen Black, Ph.D., M.A.

Professor. *International Health, Child Development, Micronutrient Supplementation, Malnutrition and Obesity, Adolescent Parenting.*

Paul A. Bolton, M.B.B.S., D.T.M.H., M.P.H., M.S.

Associate.

Sekhar Bonu, Ph.D., M.B.B.S.

Senior Associate.

Thomas Bornemann, Ed.D.

Senior Associate.

George Brenneman, M.D.

Associate.

Lori Brown, M.S.P.H., M.T.S.

Associate.

John H. Bryant, M.D.

Senior Associate.

Alfred A. Buck, M.D., M.P.H., Dr.P.H.

Adjunct Professor. *International health.*

Claude G. Cadoux, M.D.

Associate.

Vitaliano A. Cama, Ph.D., D.V.M.

Associate.

Lawrence J. Casazza, M.D., M.P.H.

Associate.

Jaime E. Castillo, M.D.

Associate.

Linda Chamberlain, M.P.H.

Associate.

Adeline Chan, Ph.D., M.P.H.

Associate.

William Checkley, Ph.D., M.S.

Associate.

Thomas Cherian, M.B.B.S., M.D.

Senior Associate.

James C. Cobey, M.D., M.P.H., F.A.C.S.

Senior Associate.

Janne M. Croll, M.P.A.S.

Associate.

Larry D. Croll, R.Ph.

Associate.

John R. Cutler, M.D., M.P.H.

Associate.

Vittorio Daniore, M.D.

Associate.

Cornelia E. Davis, M.D., M.P.H.

Associate.

Andrés de Francisco, M.D., Ph.D., M.Sc.

Associate.

Ciro de Quadros, M.D.

Adjunct Associate Professor. *International health.*

Isabelle de Zoysa, M.D., M.Sc.

Lecturer.

Hernán Delgado, M.D., M.P.H.

Senior Associate.

Luigi M. DeLuca, Ph.D.

Adjunct Professor. *Cancer and nutrition, carcinogenesis, cell differentiation.*

Carter Diggs, M.D., Ph.D.

Senior Associate.

Christine M. Du Bois, Ph.D., M.A.

Associate.

A. Edward Elmendorf, M.P.H.

Adjunct Associate Professor. *International health.*

Fayette M. Engstrom, M.D.

Associate.

Ananias Escalante, Ph.D., M.S.

Research Associate.

Carlton A. W. Evans, M.B.B.S., Ph.D.

Associate. *Tuberculosis, Nutrition, Vitamins, Zinc.*

George S. Everly, Jr., Ph.D., F.A.P.M.

Associate.

Shah M. Faruque, Ph.D., M.Sc.

Senior Associate.

Ibrahim Fayad, M.D.

Associate.

David Fedson, M.D.

Associate.

Donna M. Feeley, M.P.H.

Associate. *Complementary, Alternative and Indigenous Medicines; Energy work, Acupressure and Massage Therapies, Injury Prevention.*

Capri-Mara Filmore, M.D., M.P.H., M.Sc.

Associate.

Jonathan Friedland, Ph.D., M.B.B.S., M.A.

Associate.

Lynne Gaffikin, M.D., Dr.P.H.

Associate.

Hector Garcia, M.D., Ph.D.

Associate.

Abdul Ghaffar, MBBS, Ph.D., M.P.H., M.H.A.

Associate.

Roger I. Glass, M.D., Ph.D.

Senior Associate.

Armando E. González Zariquiey, D.V.M., M.S.

Associate.

James D. Goodyear, Ph.D., M.A.

Lecturer.

J. Eduardo Gotuzzo, M.D.

Associate.

Peter W. Gyves, M.D., M.P.H.

Associate.

Steven Hansch, M.P.H.

Associate.

Stewart Harris, M.D., M.P.H.

Associate.

Earl H. Harrison, Ph.D., M.Phil., M.N.S.

Adjunct Professor. *International health.*

Lee H. Harrison, M.D.

Adjunct Associate Professor. *International health.*

Mohamed Hashem, M.D., M.Sc.

Associate.

James R. Heiby, M.D., M.P.H.

Senior Associate.

Beth Henning, M.D., M.P.H.

Associate.

Stephen R. Hodgins, M.D., Dr.P.H.

Associate.

Michael H. Hoffman, J.D.

Associate.

Elizabeth Holt, Dr.P.H., M.S.P.H.

Associate.

Carolus B. Ijsselmeden, M.D., M.P.H.

Senior Associate.

Sirajul Islam, Ph.D., M.Sc.

Senior Associate.

T. Jacob John, M.B.B.S., Ph.D.

Senior Associate.

Robert H. Johnson, M.D., M.P.H.

Senior Associate.

Gangadeep Kang, M.D., Ph.D.

Associate.

Edward Kelly, Ph.D.

Associate.

Barbara Kerstiens, M.D., M.P.H.

Associate.

Mohammad Khalequzzaman, M.B.B.S., Ph.D., M.P.H.

Associate.

Misbah Khan, M.B., B.S., M.P.H.

Lecturer.

Etsuko Kita, M.D.

Senior Associate.

Claudio F. Lanata, M.D., M.P.H.

Associate.

Lisa-Jane Lauter, B.S.N.

Associate.

Paul A. Law, M.D., M.P.H.

Associate. *Autism, Informatics, Neonatal Health.*

Myung Ken Lee, M.D.

Associate.

Stéphane Legros, M.D., M.P.H., M.B.A.

Associate.

Elli Leontsini, M.D., M.P.H.

Associate. *ormative and operations research; survey methods, ethnographic research methods; qualitative research methods; behavioral trials; program evaluation methods; community participation; health education; health communication; health behavior change; household water management; household and community hygiene behaviors; evaluation of school-based programs; evaluation of children's museum exhibits; vector-borne disease; mosquito-borne disease; tropical disease; Aedes aegypti; dengue fever; malaria, cysticercosis; Lyme disease; diarrheal disease; child survival; IMCI; Central America; Honduras; El Salvador; Puerto Rico; Dominican Republic; Peru; Brazil; Tanzania; Cambodia.*

Raul Leon-Barua, M.D.

Senior Associate.

Orville Levander, Ph.D.

Adjunct Professor. *Oxidative stress due to deficiencies of selenium and/or vitamin E during infections such as the malarial parasite and with the coxsackie and influenza viruses.*

Lynellyn D. Long, Ph.D.

Adjunct Assistant Professor. *International health.*

Ishtiaq Mannan, MBBS

Associate.

Harold S. Margolis, M.D.

Associate.

Timothy D. Mastro, M.D.

Associate.

Rekha Menon, Ph.D.

Associate.

Lisa J. Messersmith, Ph.D., M.P.H.

Associate.

Ahmed Moen, Dr.P.H., M.P.H.

Senior Associate.

Sonia Montenegro-James, D.V.M., Ph.D.

Associate.

Helga Morrow, M.S.

Associate.

Timothy I. Mueller, M.D.

Associate.

Henry G. Mwebesa, M.B., B.S., M.P.H.

Associate.

Jennifer A. Myhre, M.D., M.P.H.

Associate.

Scott D. Myhre, M.D., M.P.H.

Associate.

Padmanabhan Nair, Ph.D.

Adjunct Professor. *Cancer chemoprevention, nutrition prevention of chronic diseases, molecular basis of nutritional disease, vitamin A, carotenoids, trace elements, bile salts, cell biology of the colon.*

Edgar Necochea, B.M., M.D., M.P.H.

Associate.

M. David Newberry, B.A.

Associate.

David Nicholas, M.D., M.P.H.

Senior Associate.

Eric K. Noji, M.D., M.P.H.

Senior Associate. *Epidemiology, Surveillance and Emergency Response, Bioterrorism Preparedness, Disease Control, Prevention.*

Robert S. Northrup, M.D.

Senior Associate.

Janet A. Novotny, Ph.D.Adjunct Assistant Professor. *Mathematical modeling, stable isotopes, caotenoids, beta-carotene, energy, macro-nutrients, alcohol.***Thomas E. Novotny, M.D., M.P.H.**

Senior Associate.

Akinlolu O. Ojumu, M.B.B.S.

Associate.

Francis Omaswa, M.B.Ch.B., M.Med

Senior Associate.

Ngudup Paljor, M.P.H.

Associate.

Gregory Pappas, M.D., Ph.D.Adjunct Associate Professor. *International health.***George Pariyo, M.C.Ch.B., Ph.D., M.Sc.**

Associate.

Jae B. Park, Ph.D.Adjunct Assistant Professor. *Energy metabolism, nutrient biochemistry, regulation of protein transcription.***Robert L. Parker, M.D., M.P.H.**Adjunct Associate Professor. *International health.***Alan Parkinson, Ph.D.**

Senior Associate.

Pierre Perrin, M.D., M.P.H.

Associate.

Henry B. Perry III, M.D., Ph.D., M.P.H.

Associate.

Ellen G. Piwoz, Sc.D., M.H.S.Adjunct Assistant Professor. *Maternal and infant nutrition, mother-to-child transmission of HIV, nutrition care and support for people living with HIV/AIDS, epidemiology, qualitative research, evaluation of interventions.***Stanley A. Plotkin, M.D.**Adjunct Professor. *International health***Firudausi Qadri, Ph.D., M.Sc.**

Senior Associate.

Amy L. Rice, Ph.D.Adjunct Assistant Professor. *infectious disease, maternal and child health, nutrition intervention programs, micronutrients, malnutrition, vitamin A, iron, zinc, Asia, Africa, Bangladesh, Indonesia, Tanzania.***Leslie F. Roberts, Ph.D., M.S.P.H.**

Associate.

W. Courtland Robinson, B.A.

Associate.

Samir K. Saha, Ph.D.

Associate.

Lubna Samad, M.D.

Associate

Harshadkumar Chandulal Sanghvi, M.B.Ch.B.

Senior Associate.

Lorenzo Savioli, M.D., M.S.Senior Associate. *Schistosomiasis and intestinal parasites.***Klaus O. Schafer, M.D., M.P.H.**

Associate.

Mauro Schechter, M.D., Ph.D.

Associate.

Kerry Jean Schulze, M.Sc.Associate. *Iodine and iron deficiencies; nutrition and infection; nutrient metabolism in children.***M. Habibur Rahman Seraji, M.B.B.S., M.P.H.**

Associate.

Irshad A. Shaikh, M.D., Ph.D., M.P.H., M.C.P.S.

Associate.

Anuraj Harish Shankar, D.Sc.Adjunct Assistant Professor. *International Health.***Almaz T. Sharman, M.D., Ph.D.**

Associate.

Irwin Shorr, M.P.S.Lecturer. *Anthropometry.***A. Kasem Siddique, M.B.B.S., M.P.H.**

Senior Associate.

Anne M. Seigle, M.P.H., B.S.N.

Associate.

A. Elisabeth Sommerfelt, M.D., M.S.

Associate.

Alan Sorkin, Ph.D.Adjunct Professor. *International Health.***Harrison C. Spencer, M.D., M.P.H., D.T.M.&H.**

Adjunct Professor.

Paul Spiegel, M.D., M.P.H.

Senior Associate.

Krista J. Stewart, Ph.D.

Associate.

Doris Storms, Sc.D., M.P.H.

Senior Associate.

Marco F. Suárez, M.Sc.

Associate.

Anne-Louise Susan, M.P.H., M.S.W.

Associate.

Matthew Tayback, Sc.D.

Lecturer. *Health and Scientific Affairs, health information systems, biostatistics.*

John Havemeyer Thomas, M.P.H.

Senior Associate.

Melvyn C. Thorne, M.D., M.P.H.

Adjunct Associate Professor. *International health.*

Aye Aye Thwin, M.B.B.S., Sc.D., M.P.H.

Associate.

Victor Tsang, Ph.D.

Associate.

Katherine A. Tulenko, M.D., M.P.H., M. Phil.

Associate.

Karunesh Tuli, M.D., M.B.B.S., Dr.P.H.,M.P.H.

Associate.

Dharmapuri Vidyasagar, M.B.B.S., M.Sc.

Associate.

Thomas T.Y. Wang, Ph.D., M.S.

Adjunct Associate Professor. *International Health.*

Corinne N.C. Whitaker, Ph.D.

Associate.

Christine S. Wilson, Ph.D.

Associate.

Norma W. Wilson, Dr.P.H.,R.N.,F.P.N.P.,P.N.P.

Associate.

Edith G.C. Wolff, J.D., M.P.H.

Associate.

Juliana E. Yartey, Dr.P.H.,M.P.H.

Associate.

Seung Hum Yu, M.D., Dr.P.H.

Senior Associate.

MD Yunus, M.B.B.S., M.Sc.

Senior Associate.

International Health

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at <http://commprojects.jhsph.edu/courses/>

220.601 INTRODUCTION TO INTERNATIONAL HEALTH. (4 units). First term. Winch, Peter. Also offered via the Internet, fourth term. Former course number 221.601.

Introduces approaches used by various countries in solving their health and medical care problems, and the role of major international health organizations. Analyzes some of the current important issues in international health.

Student evaluation: Student evaluation based on two written assignments and online exercises.

Prerequisites: Introduction to Online Learning.

221.605* HISTORY OF INTERNATIONAL HEALTH AND DEVELOPMENT. (3 units). Third term. Packard, Randall. Jointly offered with the School of Medicine. Not offered 2005-2006.

Examines the history of western efforts to promote health and nutrition in the "developing world" from the beginnings of tropical medicine to recent efforts of disease eradication. Explores the various economic and political interests, as well as cultural assumptions, that have shaped the development of ideas and practices associated with international health in "developing" countries. Topics include history of international health organizations, strategies, and policies.

Student evaluation: Written assignments.

221.606 TRAINING METHODS AND CONTINUING EDUCATION FOR HEALTH WORKERS. (3 units). Third term.

Brieger, William. Also offered via the Internet, third term.

Course identifies the role of training and continuing education as an important component of health service and personnel management. Participants are guided through the steps of planning training and continuing education activities for a range of health workers from managers to village volunteers. Draws on real life examples from community-directed onchocerciasis control, village health worker programs, and patent medicine vendor training programs, to name a few. Participants prepare a training plan that includes needs assessment instruments, procedures for involving the trainees in their own learning, instructional objectives, appropriate learning methods and delivery modes, resource and budget needs, monitoring and evaluation mechanisms and follow-up supervision. Can provide a foundation for developing a capstone project.

Student evaluation: Method of student evaluation based on one group project consisting of a detailed training plan, and two quizzes.

* Not offered every year as indicated.

221.607 CASE STUDIES IN HEALTH

POLICY AND FINANCING. (3 units). Fourth term. Oliver, Tom; Waters, Hugh. Jointly offered with the Department of Health Policy and Management.

Features a series of in-depth presentations of health sector policy and financing in the U.S. and a range of international settings. Provides an overview of changes occurring in the U.S. and internationally in health policy and financing – comparing countries at different levels of income and with varying health system infrastructures. Topics include the role of government in the health sector, sources of revenue for the health sector, health insurance systems, provider organization and payment methods, and access to health care. Emphasis is placed on approaches to solving problems using data and health policy analysis paradigms and techniques.

Student evaluation: All students are expected to participate actively in discussions and to prepare two short papers.

Prerequisites: 300.600 and 221.609.

Consent of instructor required.

221.609 INTERNATIONAL HEALTH

REFORM. (4 units). Third term. Waters, Hugh. Jointly offered with the Department of Health Policy and Management.

Provides an overview of the economic and financing mechanisms underlying changes occurring in the health sector, comparing low, medium, and higher income countries. Presents conceptual framework of financing flows in the health sector, and identifies a series of topics and case studies primarily from guest lectures from the World Bank. Topics include: sources of revenue for the health sector (including health insurance, user fees, and taxation), national health accounts, provider organization and public-private collaboration, provider payment mechanisms, and demand for health care.

Student evaluation: Student evaluation based on papers and in-class presentations.

221.611 FOOD/NUTRITION AND LIVELIHOOD IN HUMANITARIAN EMERGENCIES. (2 units). Fourth term.

Burnham, Gilbert.

Examines the epidemiology of different nutritional deficiency diseases as they appear in different types of humanitarian emergencies, reviews risk factors and presents a toolbox of categories of public health programs that are commonly used in response from supplementary feeding centers to mobilizing community nutrition workers. Current data about real food-shortage hotspots in the world is presented. Provides profiles of major international relief organizations that do nutrition and food delivery. Considers and critiques theories about how armed conflict can be unintentionally prolonged by the division of aid. Cycles of famines, famine waves, and mass population movements are used to elucidate the predictive value of models that calculate early warning of crisis. Students assess a displaced population's nutritional status, appraise and compare opportunities for food aid interventions, design a feeding or market-based program, plan and budget for the logistics of commodity transport, and monitor or evaluate program efficacy. Students learn alternate methods for obtaining and interpreting data for food security and famine-early-warning analysis and learn a basic understanding of how micro-finance (loans), subsidies, and economic policies influence long-term recovery, return, and reintegration of emergency-affected persons.

Student evaluation: Student evaluation based on a final exam and a short paper.

Prerequisites: 221.613.

221.612 CONFRONTING THE BURDEN OF INJURIES: A GLOBAL PERSPECTIVE. (3

units). Second term. Hyder, Adnan; Segui-Gomez, Maria. Also offered via the Internet, second term.

Jointly offered with the Department of Health Policy and Management.

Provides an understanding of approaches to measuring the burden of injuries around the world and familiarizes students with current estimates of the burden of injuries in the global and developing world. Develops basic skills for assessment of injury epidemiology. Provides an appreciation of how to use these measures for planning interventions for injury prevention and creates awareness of the economic implications of injuries in the developing world. Promotes effective use of data for appropriate policy analysis for reduction of injury burden.

Student evaluation: Student evaluation based on class participation and a term paper.

Prerequisites: Introduction to Online Learning; 340.601; 305.610 is recommended.

221.613 INTRODUCTION TO HUMANITARIAN EMERGENCIES. (2 units).

First term. Burnham, Gilbert; Van Rooyen, Michael.

Introduces basic types of public health emergencies, both manmade and natural and reviews public health skills used for conflict and disasters. Informs students of the environment in which these emergencies occur and how public health responses to each differ. Students learn which skills are needed to address nutritional, water and sanitation, and health needs, as well as the role of surveillance and information systems. Explores mechanisms and management of response to emergencies.

Student evaluation: Student evaluation based on class participation.

221.614 INTERNATIONAL POLITICAL SCIENCE FOR PH PRACTITIONERS. (1 unit).

Third term. Khadiagala, Gilbert.

Provides a basic understanding of structures of authority and power; economics and political systems; role and limits of international organizations in development; current concepts of development and the political process; state collapse; and the origins of conflicts. Focus is on developing countries. Compares regional political trends and forces in Asia, Africa, Latin America, and the former Soviet bloc that affect health of populations and development of health services.

Student evaluation: Student evaluation based on class participation.

221.616 ETHICS OF PUBLIC HEALTH PRACTICE IN DEVELOPING COUNTRIES.

(2 units). Fourth term. Hyder, Adnan.

Provides a forum for the deliberation and discussion of critical ethical issues in the practice of public health, including the conduct of research/clinical trials in developing countries and encourages a systematic consideration of the ethical responsibilities of all parties.

Student evaluation: Student evaluation based on class participation and a paper.

221.620 SUMMARY MEASURES OF POPULATION HEALTH. (4 units).

Fourth term. Bishai, David; Hill, Kenneth; Hyder, Adnan; Morrow, Richard; Mosley, Henry. Jointly offered with the Department of Population and Family Health Sciences.

Explores the conceptual basis and application of summary measures of population health status. Presents approaches to measuring the burden of disease in populations and their use for guiding resource allocation and planning efficient and equitable health care systems. Lectures, discussions, and group exercises focus on composite indicators, exploring social and ethical value choices, and assessing the burden of disease at national level.

Student evaluation: Student evaluation based on class participation, critiques of methods and term paper.

221.621 ELEMENTS OF ECONOMICS. (4 units). First term. Sorkin, Alan. Jointly offered with the Department of Population and Family Health Sciences.

Introduces micro- and macroeconomics, including supply and demand, national income accounting, equilibrium of the firm, and economic growth and development. Draws illustrations from health and population economics.

Student evaluation: Student evaluation based on two exams.

221.624 URBAN HEALTH IN DEVELOPING COUNTRIES. (3 units). Fourth term. Baqui, Abdullah; Hyder, Adnan.

Introduces the emerging public health issues associated with rapid growth of urban populations in developing countries, with a particular focus on the urban poor. Addresses urban demography, epidemiology, environmental health, health consequences of social instability (e.g., high mobility, violence), nutritional issues, the inadequacy of conventional health services, and the design and implementation of a coordinated and cost-effective health care system. Emphasis placed on capacity-building by exposing public health professionals and researchers to the unique urban health problems of developing countries.

Student evaluation: Based on a term paper.

221.627 ISSUES IN MATERNAL MORTALITY REDUCTION IN DEVELOPING COUNTRIES. (4 units).

Second term. Smith, Jeffrey; Stanton, Cynthia. Also offered via the Internet, second term. Jointly offered with the Department of Population and Family Health Sciences.

Reviews fundamental components of strategies for the reduction of maternal mortality and disease. Topics include reviews of clinical basis of maternal complications, maternal mortality measurement, community-level interventions, behavior change interventions, use of traditional birth attendants and program planning, monitoring and evaluation. Emphasis is on the current strategies believed to be effective, and review of previous strategies.

Student evaluation: Students grades are based on lab exercises, class participation and a final exam.

Prerequisites: Introduction to Online Learning.

221.628 BASIC TECHNIQUES FOR HEALTH PLANNING. (4 units). Fourth term. Baker, Tim.

Reviews techniques from statistics, demography, epidemiology, economics, administration and management, and operations research as a basis for health planning in developing countries. Also introduces special considerations and methods of manpower and facilities planning.

Student evaluation: Student evaluation based on class participation and take-home problems.

221.629 WATER AND SANITATION NEEDS IN COMPLEX HUMANITARIAN EMERGENCIES. (2 units). Second term.

Roberts, Leslie.

Presents a historical overview of the influence of water and sanitation on human health; types of water and sanitation facilities and equipment presently available and particularly suited to refugee populations displaced by war, famine, drought, and economic turmoil; and methodologies for assessing and quantifying water and sanitation needs.

Student evaluation: Student evaluation based on a take-home exam.

221.633 PUBLIC HEALTH ISSUES IN DISASTERS. (2 units). Third term. Burnham, Gilbert; Van Rooyen, Michael.

Examines fundamental concepts in disaster studies and disaster management practices. Topics include disaster epidemiology, natural history of disasters, rapid epidemiologic assessment, strategy of disaster management, agencies involved in relief operations, development through disaster planning, and mission craft. Includes lectures, group exercises, and discussion.

Student evaluation: Student evaluation based on a paper, a mid-term essay, and class participation.

Prerequisites: 340.601.

Consent of instructor required.

221.634 STRESS MANAGEMENT FOR RELIEF WORKERS. (1 unit). Third term.

Everly, George.

Provides awareness of emotional stress faced by health workers providing humanitarian assistance in emergency situations. Topics include signs and symptoms of stress disorders (critical-incident stress), components of critical-incident management programs, and provision of services to prevent long-term mental health consequences.

Student evaluation: Student evaluation based on class participation, and a take-home final exam.

221.635 CASE STUDIES IN PRIMARY HEALTH CARE. (4 units). Second term. Taylor, Carl.

Introduces students to the origins, concepts and development of community-based primary health care through case studies from both developing and developed countries. Like clinical bedside teaching, the course uses real cases to help students develop problem-solving skills in practical situations. Participatory approaches in the organization and management of health services and other factors such as equity, socio-cultural change and environmental protection are discussed.

Student evaluation: Student evaluation based on discussion, participation and a final paper.

Prerequisites: 220.601.

Consent of instructor required.

221.637 HEALTH INFORMATION SYSTEMS. (3 units). Fourth term. Offered via the Internet only.

Systematically presents population-based and provider-based methods by which data are secured and analyzed to provide indicators of health service use, health risk behavior, and outcomes relative to health status. Targets health status indicators as the basis of planning and evaluation across a wide range of health objectives and measurement characteristics examined.

Introduces health information resources available through the World Wide Web and develops skills to search and access data through the Internet.

Student evaluation: Lab grades, final exam.

Prerequisites: Introduction to Online Learning.

221.638 HEALTH SYSTEMS RESEARCH AND EVALUATION IN DEVELOPING COUNTRIES. (4 units). Fourth term. Reinke, William.

Establishes the purposes of program evaluation and gives operational meaning to measures of efficiency, effectiveness, equity, and sustainability. Describes evaluation methods using a health and management information system and presents methods for investigating non-routine evaluative questions.

Student evaluation: Student evaluation based on a short paper, and exercises involving evaluation of services coverage and outcome, and use of human, physical, and financial resources.

221.639 REFUGEE HEALTH CARE. (3 units). Second term. Burnham, Gilbert; Shields, Mary. Also offered via the Internet, first term.

Addresses provision of basic health requirements for refugees and coordination of care among agencies concerned with them. Topics include epidemiologic assessment and control of communicable disease; nutrition and environmental sanitation; logistical support; and resettlement issues. Students or guest speakers present topics for group discussion.

Student evaluation: Student evaluation based on oral presentations or papers.

Prerequisites: Introduction to Online Learning.

221.640 CHILDREN IN CRISIS. (1 unit).

Fourth term. Burnham, Gilbert; Ruff, Andy; Wissow, Lawrence. Jointly offered with the Department of Health Policy and Management.

Designed to expose students to the range of threats to child welfare present in the developing and developed world. Focuses on settings in which societal structure and processes fail to provide essential resources for children, or through design or a break-down of structure promote their exploitation. Examples of possible topics covered in any given year include child labor, child combatants, children as sexual commodities, gender disparities, international variation in laws regarding violence against children, and the care of children orphaned by war or disease. Emphasis is placed on understanding the political and cultural forces that place children at risk and on the critical elements of culturally-acceptable solutions. Co-sponsored by Save the Children (USA).

Student evaluation: Based on paper presentation and class participation.

221.641 MEASUREMENT METHODS IN HUMANITARIAN EMERGENCIES. (2 units).

Fourth term. Robinson, Courtland.

Gives students an understanding and skills needed in the measurement of populations and health indicators in humanitarian emergencies, when conventional measurement methods cannot be utilized. Includes assessment methods, sampling approaches in a variety of emergency situations, design and conduct of surveys, and the analysis and presentation of results. Includes discussions and examples of active and passive surveillance methods for refugee and other emergency situations. Both qualitative and quantitative methods will be presented.

Student evaluation: Based on final paper or group presentation and class participation

Prerequisites: 221.613.

221.661 PROJECT DEVELOPMENT FOR PRIMARY HEALTH CARE IN

DEVELOPING COUNTRIES. (4 units). Fourth term. Burnham, Gilbert; Henderson, Anne.

Supplements 221.601 by focusing on the practical problems in the planning, design, implementation, and evaluation of primary health care programs in developing countries. Students design a primary health care program addressing community participation, needs assessment, training and supervision of CHWs, approaches to sustainability, logistics of service delivery, monitoring, and evaluation, and present them to the class.

Student evaluation: Student evaluation based on group assignments, class participation, a mid-term paper, and a review of a public health care proposal.

Prerequisites: 221.601.

Consent of instructor required.

221.688 SOCIAL AND BEHAVIORAL FOUNDATIONS OF PRIMARY HEALTH

CARE. (4 units). Second term. Brieger, William. Also offered via the Internet, Summer term. Former course number 224.688.

Provides students with the knowledge and skills needed to understand individual, community, and organizational behaviors and change processes in cross-cultural and developing countries settings as a foundation for planning appropriate Primary Health Care (PHC) programs. Students learn to outline the contributions of social and behavioral science theory in the planning and implementation of culturally relevant PHC programs; will utilize social and behavioral theories to understand individual, social network, organizational, community, and policy maker health related behaviors; and identify the factors that promote and inhibit community involvement in PHC program development and implementation.

Student evaluation: Student evaluation based on homework and a term paper.

Prerequisites: Introduction to Online Learning.

221.706 MANAGEMENT OF HEALTH SYSTEMS IN DEVELOPING COUNTRIES I.

(2 units). Third term. Offered via the Internet only.

Presents and interrelates the historic development of basic health services and the origins of modern management thought. Provides examples of successful management innovations and issues in and constraints to improving health services management in the Third World, emphasizing immunization management, rehydration/diarrhea control, maternal-child/family planning, and primary health care programs.

Student evaluation: Method of student evaluation based on individual exercises, term paper, final exam, and class participation.

Prerequisites: Introduction to Online Learning.

221.707 MANAGEMENT OF HEALTH SYSTEMS IN DEVELOPING COUNTRIES II.

(3 units). Fourth term. Offered via the Internet only.

Presents and interrelates the historic development of basic health services and the origins of modern management thought. Provides examples of successful management innovations and issues in and constraints to improving health services management in the Third World, emphasizing immunization management, rehydration/diarrhea control, maternal-child/family planning, and primary health care programs.

Student evaluation: Method of student evaluation based on individual exercises, term paper, final exam, and class participation.

Prerequisites: Introduction to Online Learning.

221.722 QUALITY ASSURANCE MANAGEMENT METHODS FOR DEVELOPING COUNTRIES.

(4 units). Third term. Burnham, Gilbert; Edward-Raj, Anbarasi; Morrow, Richard; Weiss, Bill. Also offered via the Internet, third term. Jointly offered with the Department of Health Policy and Management.

Presents the principles and practice of total quality management methods for health systems in developing countries. Emphasizes integrated district-level health systems management; fostering a genuine team approach in the face of an authoritarian tradition; central importance of community governance; interventions performed according to standards and in an equitable fashion; introducing a measurement-based approach to problem solving, emphasizing analysis of service delivery process and outcome; and developing operational research as an integral component of the management system.

Student evaluation: Student evaluation based on analysis and presentation of case studies.

Prerequisites: Introduction to Online Learning.

222.641 PRINCIPLES OF HUMAN

NUTRITION. (4 units). First term. Caballero, Benjamin; Cheskin, Lawrence; Cooper, David S.; O'Brien, Kimberly; Paige, David; West, Keith. Also offered via the Internet, Summer term.

Provides an integrated overview of the physiological requirements and functions of protein, energy, and the major vitamins and minerals that are determinants of health and disease. Topics include dietary sources, intake levels, and biological determinants of nutrient requirements; assessment of nutrient status in individuals and populations; the role of nutrition in growth and health through the life cycle; the rationale for the development of dietary guidelines and of nutrition policies in different countries; and the role of diet on the development of chronic diseases, such as cardiovascular disease, cancer, diabetes, etc.

Student evaluation: Student evaluation based on a take-home exercise and final exam.

Prerequisites: Introduction to Online Learning; basic background in biology/medical sciences.

222.642 ASSESSMENT OF NUTRITIONAL STATUS. (3 units). Second term. Treuth, Margarita.

Provides hands-on experience in anthropometric, biochemical, and dietary nutrition assessment techniques of individuals and populations. Laboratory exercises include the measurement of body composition, use of food composition tables, and classification of nutritional status. Student evaluation based on laboratory exercises and class participation.

Student evaluation: Student evaluation based on laboratory exercises and class participation.

222.643 HISTORY OF NUTRITION IN PUBLIC HEALTH. (1 unit). Fourth term. Semba, Richard.

Reviews the evolution of ideas regarding nutrition and public health, which accompanied the elimination of many nutritional deficiencies and reduction of morbidity and mortality in industrialized countries in the 19th and early 20th centuries. Discusses current arguments in historical demography regarding the role of nutrition. Presents several case studies, including scurvy, beriberi, pellagra, rickets, iodine deficiency, infant feeding, and pure food. Emphasizes the relevance of selected historical examples to contemporary approaches taken for nutrition and public health in developing countries.

Student evaluation: Student evaluation based on a short essay examination.

222.647 NUTRITION EPIDEMIOLOGY. (3 units). Third term. Caulfield, Laura.

Reviews methodological issues related to nutritional assessment in the context of clinical, epidemiological, and programmatic research design. Discusses nutrition surveillance, cohort studies, field intervention trials, assessment techniques, and research design, including data collection, analysis, and interpretation.

Student evaluation: Student evaluation based on class participation and homework exercises.

222.649 INTERNATIONAL NUTRITION. (3 units). Fourth term. West, Keith.

Presents major nutritional problems that influence the health, survival, and developmental capacity of populations in developing societies. Covers approaches implemented at the household, community, national, and international levels to improve nutritional status. Explores the degree to which malnutrition can be prevented or reduced prior to achieving full economic development through targeted public and private sector interventions that address the causes of malnutrition.

Student evaluation: Student evaluation based on term paper and participation.

222.651 ADVANCED NUTRIENT METABOLISM. (3 units). Second term. O'Brien, Kimberly.

Provides an in-depth review of the transport, storage, cellular and biochemical processing of major nutrients. Focuses on regulatory mechanisms, integration of metabolic pathways, and biochemical and physiological aspects of nutrient metabolism at the whole body, tissue and cellular level. Includes both discussion and lectures.

Prerequisites: Previous course work in nutrition.

222.654 FOOD, CULTURE, AND NUTRITION. (4 units). Fourth term. Gittelsohn, Joel.

Introduces the bio-cultural influences on nutrition and their relevance to international and domestic public health research and programs. Topics include theoretical and methodological issues in nutritional anthropology, an overview of social scientific contributions to nutrition focusing on cultural perspectives of infant feeding, social impacts on under- and overnutrition, comparisons of Eastern and Western traditions of nutrition and the role of nutritional anthropology in the development of public health interventions.

Student evaluation: Student evaluation based on class discussions, exercises, and a group report.

Consent of instructor required.

222.655 NUTRITION AND LIFE STAGES. (3 units). Third term. Christian, Parul.

Reviews stages of human development as a prism for understanding human nutrition. Discussions focus on various life stages, highlighting the biological, social and behavioral changes that influence the transitions in nutrition between life stages. Identifies key nutritional considerations for optimal human growth and development. Discusses early nutritional influences on health and well-being later in life.

Student evaluation: Student evaluation based on class participation and written assignments.

222.656 CRITICAL ANALYSIS OF POPULAR DIETS AND DIETARY SUPPLEMENTS. (3 units). Fourth term. Cheskin, Lawrence.

Dietary supplements and diets purporting to promote health, induce weight loss, or treat specific health concerns are widely used by Americans, and often minimally regulated. In this course, students apply the tools of nutritional science to a critical analysis of popular diets and supplements. Students are instructed in the following: nutrient analysis, dissecting several example diets and supplements in class discussions, preparing a comprehensive written analysis of a specific diet or supplement of their choosing, and presenting their findings orally.

Student evaluation: Class participation, final paper and presentation.

Prerequisites: 222.641 or equivalent; 140.611-612 or equivalent.

Consent of instructor required.

222.657 FOOD AND NUTRITION POLICY. (2 units). First term. Klemm, Rolf; Watkins, William E.; West, Keith.

Examines major governmental, bilateral, and multilateral agency food and nutrition policies and programs that directly or indirectly affect 1) the availability and quality of food and 2) the health and nutrition of populations. Examples are drawn from developing and developed countries. Discussions are led by faculty and guest lecturers with diverse experience in developing and implementing food and nutrition policies.

Student evaluation: Based on class participation and term paper.

222.658 CRITICAL THINKING IN NUTRITION. (1 unit). First term. Cheskin, Lawrence. Former course number 222.868.

Introduces graduate students of nutrition to the seminal literature in the field. Teaches students how to interpret and evaluate literature, and foster discussion and debate among students and faculty on current issues. Faculty selects seminal papers and participates in the discussion. Students are expected to read each paper as well as discuss and explain the methods and results in class.

Student evaluation: Student evaluation is based on attendance and contribution to discussion.

Consent of instructor required.

223.601 TRACKING THE HEALTH OF POPULATIONS. (3 units). Summer term. Diener-West, Marie; Hill, Kenneth; Tielsch, James.

Presents the foundations and practical applications of methods used to quantitatively assess and monitor the health of populations. Emphasis is on how quantitative information is used in the priority setting process, the management of disease control programs, and in assessing and comparing the performance of selected intervention approaches to improving population health at the local, national, and international levels. The sources of data and the strengths and limitations of currently used indicators of population health, including various measures of mortality and population structure and growth, are described. Appropriate presentation of quantitative information through the use of tabular and graphical displays are emphasized as is the application of standard analytic methods such as age standardization and basic life tables.

Student evaluation: Student evaluation based on problem sets, a mid-term, and final examination.

223.662 VACCINE DEVELOPMENT AND APPLICATION. (3 units). Second term. Halsey, Neal.

Reviews the processes used to evaluate all aspects of vaccine development and the use of immunizations for disease prevention. Emphasizes in-depth understanding of vaccines successfully introduced into routine immunization schedules. Discusses procedures and oversight at each step in the process, including post-licensure policy making and monitoring for safety and effectiveness.

Student evaluation: Student evaluation based on two exams (one take-home), with the option of a short paper.

223.663 INFECTIOUS DISEASES AND CHILD SURVIVAL. (3 units). Third term. Karron, Ruth.

Reviews the major causes of childhood morbidity and mortality in the developed and developing world, and introduces intervention strategies. Reviews infectious disease problems contributing to childhood morbidity and mortality worldwide, including (but not limited to) HIV, TB, polio, tetanus, diarrheal disease, ARI, helminth infections, and measles. Emphasizes epidemiology, strategies for prevention and control, and differences between developed and developing countries.

Student evaluation: Student evaluation based on an oral presentation, mid-term examination and class participation.

Consent of instructor required.

223.664 DESIGN AND CONDUCT OF COMMUNITY TRIALS. (3 units). Third term. Katz, Joanne; Steinhoff, Mark. Former course number 221.630.

Helps students (1) critically review the community trials literature, (2) develop, identify and justify a randomized community trial design appropriate to answer a set of specific research aims. Different types of randomized study designs appropriate for community (as opposed to clinical) trials are discussed. Topics include critical review of the community trials literature, formulation of specific aims, selection of study designs and appropriate study populations, estimation of sample size, methods for allocation of interventions or treatments, grantsmanship and budgeting, community participation, consent procedures, ethical and cultural considerations, specification of key outcomes, Safety and Monitoring Boards, data analyses and publication of results. These methods apply in many settings, but emphasis is placed on issues that are unique to developing country environments.

Student evaluation: Student evaluation based on exercises and oral presentations.

Prerequisites: 140.621, 140.622, 140.623 concurrently, or 140.651-653340.602 or 340.608 highly recommended.

Consent of instructor required.

223.671 PUBLIC HEALTH SURVEILLANCE: METHODS AND APPLICATIONS. (3 units).

Fourth term. Burke, Thomas; Dominici, Francesca; Tielsch, James. Jointly offered with the Department of Health Policy and Management.

Course presents the methodological foundations and practical applications required for the design, operation, and evaluation of public health surveillance systems. Didactic sessions cover the basic methods used in the design and analysis of surveillance data, the sources of surveillance data available at the state, national, and international levels, and the methods used to evaluate the performance of surveillance systems. In addition, a case-study approach is used to present current applications of surveillance systems to domestic and international public health problems. Topics of the case studies include the role of surveillance in disease eradication campaigns, refugee and emergency situations, medical product regulation, emerging infectious diseases, environmental health programs, nosocomial infections, and bioterrorism.

Student evaluation: Student evaluation based on an examination and a group project.

Prerequisites: 340.601,140.612 or 140.623 or 140.653.

223.672 DATA MGMT METHODS IN HEALTH RESEARCH STUDIES. (5 units).

Fourth term. Holt, Elizabeth. Also offered via the Internet, Summer term.

Presents data management techniques needed to implement a health research study, especially in international settings. Discusses methods of designing and monitoring patient data flow, emphasizing data collection, management, and analysis using database software packages.

Involves lectures and labs. Geared to second-year doctoral students preparing to undertake research.

Student evaluation: Student evaluation based on problem sets and class participation.

Prerequisites: Introduction to Online Learning; 340.601 - Principles of Epidemiology.

223.676* PUBLIC HEALTH

OPHTHALMOLOGY I. (8 units). Third term. Tielsch, James. Jointly offered with the Department of Epidemiology. Next offered 2006-2007.

Presents public health issues related to ocular disease and blindness prevention in developed and developing countries. Covers in detail the epidemiology, diagnosis, treatment, and prevention of the major blinding ocular disorders as well as the organization and financing of blindness control programs in developing countries. Includes laboratory sessions on the diagnosis of vitamin A deficiency, cataract classification, and trachoma grading. Each student prepares a proposal for a research or blindness prevention control project.

Student evaluation: Student evaluation based on an exam and a paper.

Consent of instructor required.

223.677* PUBLIC HEALTH

OPHTHALMOLOGY II. (6 units). Fourth term. Tielsch, James. Jointly offered with the Department of Epidemiology. Next offered 2006-2007.

Presents public health issues related to ocular disease and blindness prevention in developed and developing countries. Covers in detail the epidemiology, diagnosis, treatment, and prevention of the major blinding ocular disorders as well as the organization and financing of blindness control programs in developing countries. Includes laboratory sessions on the diagnosis of vitamin A deficiency, cataract classification, and trachoma grading. Each student prepares a proposal for a research or blindness prevention control project.

Student evaluation: Student evaluation based on an exam and a paper.

Prerequisites: 223.676.

Consent of instructor required.

223.680 GLOBAL DISEASE CONTROL PROGRAMS AND POLICIES. (4 units). Fourth term. Black, Robert; Pierce, Nathaniel.

Presents the history, development, organization, technical content and basis, social and political context, evaluation, and funding of current, major, global initiatives for disease control. Emphasis is on programs focused on health problems of the developing world and includes, initiatives for vaccines and immunization, the Integrated Management of Childhood Illness, safe motherhood and reproductive health, neonatal health, malaria, onchocerciasis, STDs, tobacco control, nutritional interventions and injury control. The course also examines the process of policy formulation and resource allocation to international health and disease control

Student evaluation: Student evaluation based on a paper and a final examination.

Prerequisites: 340.601.

223.682 CLINICAL ASPECTS TROPICAL DISEASES. (3 units). Second term. Sack, R. Bradley. Former course number 224.682.

Discusses major parasitic, viral, and bacterial diseases of developing countries. Presents clinical aspects of the disease, including diagnosis and treatment, and epidemiological aspects.

Student evaluation: Student evaluation based on class presentation and a final exam.

Prerequisites: Understanding of basic biomedical concepts and terminology.

223.687 VACCINE POLICY ISSUES. (3 units). Third term. Salmon, Daniel. Former course number 224.687.

Examines current national and international policy issues in vaccine research, development, manufacturing, supply, and utilization. Topics include development of orphan vaccines, ensuring an adequate supply of safe and effective vaccines, vaccine injury compensation, and disease eradication. Emphasizes the identification of important vaccine policy issues and the development and evaluation of policies to address these issues. Presents the roles, responsibilities, and policy positions of key immunization stakeholders via guest lectures by a wide array of experts who have worked for important vaccine groups (i.e., FDA, GAVI, Vaccine Industry, US Vaccine Injury Compensation Program, Consumer Group). Readings include relevant scientific papers and reviews, and publications of U.S. and international agencies.

Student evaluation: Student evaluation based on class participation, an Op-Ed piece, and a policy analysis paper.

Prerequisites: 223.622 recommended.

223.689 BIOLOGIC BASIS OF VACCINE DEVELOPMENT. (3 units). Fourth term. Bourgeois, August; Durbin, Anna; Schwartz, David. Jointly offered with the Department of Molecular Microbiology and Immunology. Former course number 224.689.

Provides an overview of the biologic basis for development and evaluation of new viral, bacteriologic, parasitic, and cancer vaccines. Lectures address the fundamental immunologic concepts of correlates of protective immunity underlying current and new strategies for immunization. Emphasizes the use of new technologies for expression of vaccine antigens, including recombinant DNA techniques and use of novel adjuvants and antigen-carrier systems to enhance the delivery/presentation of specific immunogens to effector sites.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: 260.611-612, or equivalent knowledge of principles of modern immunology.

223.705 CLINICAL VACCINE TRIALS AND GOOD CLINICAL PRACTICE (GCP). (3

units). First and fourth terms. Offered via the Internet only.

Provides students with background and tools needed to implement Phase I or II clinical trials in a healthy population according to the standards of Good Clinical Practice (GCP). Includes the following topics: review of vaccine history and types; discussion of phases of vaccine trials; development and implementation of a vaccine protocol; GCP guidelines; roles and responsibilities of the investigator and designees; ethical review committees and sponsors; budget development; product management; human subjects protection; and data collection and management, recruitment, community outreach, and overall trial conduct.

Student evaluation: Student evaluation based on participation and completion of individual and group projects.

Prerequisites: Introduction to Online Learning.

Consent of instructor required.

224.689 FOUNDATIONS OF BEHAVIORAL CHANGE INTERVENTIONS IN DEVELOPING COUNTRIES. (4 units).

Second term. Sweat, Michael. Former course number 223.678.

Introduces the development and implementation of behavior change interventions in developing country settings. Readings, lectures, case studies and exercises prepare students to conduct behavioral and community interventions in resource poor settings. Topics include behavioral change theories in medical sociology, anthropology, and psychology, formative and effectiveness research, and integration of behavioral interventions with biomedical interventions.

Student evaluation: Student evaluation based on class participation, a midterm, and a final exam.

224.690 QUALITATIVE RESEARCH I. (6 units). Third term. Gittelsohn, Joel.

Provides hands-on experience in qualitative methods for community health and nutrition research, with a focus on in-depth interviews, focus groups and direct observation. An introduction to the theoretical basis for qualitative research is provided. Offers instruction on techniques for collecting, recording, managing, coding and analyzing textual data. Students form teams and conduct field research using the methods taught in class.

Student evaluation: Student evaluation based on field exercises.

224.691 QUALITATIVE RESEARCH II. (6 units). Fourth term. Leonard, Lori.

Students continue working on fieldwork projects initiated in Qualitative Research I (224.690). However, emphasis is placed on analysis, presentation and writing of qualitative data, including data collected as part of the fieldwork project. Theoretical issues are discussed in conjunction with these activities, including issues of data quality.

Student evaluation: Student evaluation based on field exercises (50%), quizzes based on the readings (25%), and a final written ethnographic report (25%).

Prerequisites: 224.690.

224.692 FORMATIVE RESEARCH FOR BEHAVIORAL AND COMMUNITY INTERVENTIONS.

(3 units). Fourth term. Leontsini, Elli; Mamon, Joyce; Winch, Peter.

Presents and analyzes case studies on multi-method formative research to explore local knowledge, practices and constraints, and the use of the data collected to develop more effective behavioral and community interventions.

Examples presented and analyzed include programs to prevent and control HIV/AIDS, malaria, dengue hemorrhagic fever, diarrhea, pneumonia and neonatal mortality in Latin America, Africa and Asia. Cross-cutting issues on data management, staff training the study of sensitive behaviors are discussed. Students read assigned materials, attend class, write and present their critiques of class readings, actively engage in classroom discussions, and write essays on formative research-related problem-solving in response to case scenarios.

Student evaluation: Student evaluation based on class participation (20%), written critiques of class readings (30%), and formative research essays (50%).

Prerequisites: 224.688 or 224.689 and 224.690-691; or consent of instructor.

Consent of instructor required.

224.693 PROPOSAL DEVELOPMENT FOR SOCIAL SCIENCES RESEARCH.

(3 units). Second term. Sweat, Michael. Former course number 223.670.

Reviews the basics of research design and methods, technical writing, and funding mechanisms and donor agencies to improve skills in review, critique, and defense of research proposals in the social sciences. Students present their ideas for feedback and discussion and participate in a mock defense of their research plans, with their advisors present.

Student evaluation: Student evaluation based on class participation (10%), a paper (70%), and written critique of proposals (20%).

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

In addition to the course in program planning, suitable students are encouraged to undertake other special studies, in some cases leading to doctoral research.

220.800 MPH CAPSTONE

INTERNATIONAL HEALTH. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

220.810 FIELD PLACEMENT DRPH PROGRAM INTERNATIONAL HEALTH.

(variable units). First, second, third and fourth terms.

220.820 THESIS RESEARCH DRPH PROGRAM INTERNATIONAL HEALTH.

(variable units). First, second, third and fourth terms.

220.840 SPECIAL STUDIES AND RESEARCH DRPH PROGRAM INTERNATIONAL HEALTH.

(variable units). First, second, third and fourth terms.

Health Systems

221.810 FIELD PLACEMENT HEALTH SYSTEMS. (variable units). First, second, third and fourth terms.

221.820 THESIS RESEARCH HEALTH SYSTEMS. (variable units). First, second, third and fourth terms.

221.830 POSTDOCTORAL RESEARCH HEALTH SYSTEMS. (variable units). First, second, third and fourth terms.

221.840 SPECIAL STUDIES AND RESEARCH HEALTH SYSTEMS. (variable units). First, second, third and fourth terms.

221.850 MANAGEMENT OF MALARIA IN COMPLEX EMERGENCIES. (4 units). Winter institute. Burnham, Gilbert.

Designed for persons from organizations which provide assistance to refugees and internally displaced groups where malaria is a medical problem. Includes both theoretical concepts of disease and transmission as well as giving practical tools for the prevention and control of malaria. Includes a section on the epidemiology of malaria. **Student evaluation:** Assessment is through participation and a small take-home exercise.

221.860 HEALTH SYSTEMS PROGRAM SEMINAR. (1 unit). First, second, third and fourth terms. Departmental faculty.

Health Systems Program faculty present ongoing activities and doctoral students present their research interests and findings. The seminar may be used occasionally for administrative or academic matters.

Student evaluation: Student evaluation based on attendance and class participation.
Consent of instructor required.

Human Nutrition

222.810 FIELD PLACEMENT HUMAN NUTRITION. (variable units). First, second, third and fourth terms.

222.820 THESIS RESEARCH HUMAN NUTRITION. (variable units). First, second, third and fourth terms.

222.830 POSTDOCTORAL RESEARCH HUMAN NUTRITION. (variable units). First, second, third and fourth terms.

222.840 SPECIAL STUDIES AND RESEARCH HUMAN NUTRITION. (variable units). First, second, third and fourth terms.

222.860 GRADUATE NUTRITION

SEMINAR. (1 unit). First, second, third and fourth terms. Treuth, Margarita; West, Keith. Former course number 222.866.

Presentations of recent and/or historical papers in human nutrition. Emphasizes presentation skills and ability to critically evaluate scientific papers.

Student evaluation: Student evaluation based on attendance and an oral presentation.
Consent of instructor required.

222.861 DOCTORAL SEMINAR IN

PROPOSAL DEVELOPMENT. (1 unit). First, second, third and fourth terms. Caulfield, Laura.

Facilitates doctoral students in the development of research ideas and their dissertation proposals. Topics will vary by term but will include the following: how to develop a research idea, and components of a solid research proposal – background, design, methods, sample size, analysis, writing to different audiences, research designs in nutrition, ethical review, funding sources and requirements, budgeting, staff management, thesis and manuscript preparation, and professional development.

Student evaluation: Student evaluation based on oral presentations, written sections of the proposal, attendance, and class participation

Disease Control

223.810 FIELD PLACEMENT DISEASE CONTROL. (variable units). First, second, third and fourth terms.

223.820 THESIS RESEARCH DISEASE CONTROL. (variable units). First, second, third and fourth terms.

223.830 POSTDOCTORAL RESEARCH DISEASE CONTROL. (variable units). First, second, third and fourth terms.

223.840 SPECIAL STUDIES AND RESEARCH DISEASE CONTROL. (variable units). First, second, third and fourth terms.

223.860 DISEASE PREVENTION AND CONTROL PROGRAM SEMINAR. (1 unit).

First, second, third and fourth terms. Charron, Karen; Coles, Christian; Katz, Joanne; Moulton, Lawrence.

Disease Prevention and Control faculty present ongoing research and program activities and doctoral students present their research interests and findings. Seminar may be used occasionally for administrative or academic matters.

Student evaluation: Student evaluation based on attendance and class participation.

Consent of instructor required.

223.867 VACCINE SEMINAR. (1 unit). First, second, third and fourth terms. Burke, Donald.

Year-long series of bi-weekly seminars (total 16 seminars, 4 per term) on vaccine research against infectious diseases of global importance including AIDS, tuberculosis, malaria, childhood illnesses, and many others. Economic, political, and ethical dimensions of vaccine R&D are also covered.

Seminars are presented by leading vaccine experts at JHU and other institutions. Series provides the student with an understanding of the pathways leading to development and utilization of vaccines with public health impact.

Student evaluation: Student evaluation based on attendance and class participation.

Social and Behavioral Interventions

224.810 FIELD PLACEMENT SOCIAL AND BEHAVIORAL INTERVENTIONS. (variable units). First, second, third and fourth terms.

224.820 THESIS RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS. (variable units). First, second, third and fourth terms.

224.830 POSTDOCTORAL RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS. (variable units). First, second, third and fourth terms.

224.840 SPECIAL STUDIES AND RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS. (variable units). First, second, third and fourth terms.

224.863* GRADUATE SEMINAR IN RESEARCH METHODS IN APPLIED MEDICAL ANTHROPOLOGY I. (4 units).

First term. Winch, Peter. Former course number 221.863. Next offered 2005-2006.

Discusses methods for collecting and analyzing qualitative data; quantifying ethnomedical beliefs; and integrating qualitative and quantitative methods. Topics include cultural consensus analysis, scale development and testing, multi-dimensional scaling, analysis of structured observation data, development of manuals for qualitative data collection, and the use of social science data in the design of public health interventions.

Student evaluation: Assignments and final examination.

Prerequisites: 224.690 and 224.691 Qualitative Research or equivalent.

Consent of instructor required.

224.864* GRADUATE SEMINAR IN RESEARCH METHODS IN APPLIED MEDICAL ANTHROPOLOGY II. (4 units).

Second term. Winch, Peter. Former course number 221.864. Next offered 2005-2006.

Discusses methods for collecting and analyzing qualitative data; quantifying ethnomedical beliefs; and integrating qualitative and quantitative methods. Topics include cultural consensus analysis, scale development and testing, multi-dimensional scaling, analysis of structured observation data, development of manuals for qualitative data collection, and the use of social science data in the design of public health interventions.

Student evaluation: Student evaluation based on written critiques of articles (50%) and presentations of analyses of data sets (50%).

Prerequisites: 224.690 and 224.691 or equivalent.

Consent of instructor required.

224.865 GRADUATE SEMINAR IN BEHAVIOR CHANGE AND HEALTH. (3

units). Fourth term. Kerrigan, Deanna. Former course number 222.865.

Through readings and discussion of psychosocial theory, students explore the nature of and influences on human behavior and how these factors impact health-related change at both the individual and group levels.

Student evaluation: Student evaluation is based on class participation (25%), a final paper (50%) and presentation (25%).

Consent of instructor required.

COURSES JOINTLY OFFERED WITH OTHER DEPARTMENTS

140.608 HEALTH ADMINISTRATION STATISTICS. See Department of Biostatistics.

188.687 GLOBAL OCCUPATIONAL HEALTH. See Department of Environmental Health Sciences.

306.665 RESEARCH ETHICS AND INTEGRITY: U.S. AND INTERNATIONAL ISSUES. See Department of Health Policy and Management.

313.640 INTRODUCTION TO HEALTH ECONOMICS I. See Department of Health Policy and Management.

313.641 INTRODUCTION TO HEALTH ECONOMICS II. See Department of Health Policy and Management.

340.615 TOBACCO CONTROL: NATIONAL AND INTERNATIONAL APPROACHES. See Department of Epidemiology.

**INTERDEPARTMENTAL
MANAGEMENT SEQUENCE - SEE
DEPARTMENT OF HEALTH
POLICY AND MANAGEMENT**

551.601 MANAGING HEALTH SERVICES ORGANIZATIONS. (4 units). First term. Gundlach, Ann-Michele; Peters, David; Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of Health Policy and Management. Former course number 312.612.

Provides an introduction to managing and leading health services organizations based on the JHSPH Leadership and Management Paradigm. Within this paradigm, the stated purpose of the organization is achieved by applying leadership skills to influence people and institutions, and managing resources within a framework of principles, people, processes and organizational design. Major topics include: the healthcare environment and its organizational implications; creating a shared mission, vision and values; developing measurable goals and objectives; organizational design and structure; public participation in health service organizations; patient safety and ethical principles; communication; human resource management; continuous process improvement and measuring and monitoring organizational performance.

Student evaluation: Based on student exercises.

Prerequisites: Introduction to Online Learning.

551.602 EXERCISES IN MANAGING HEALTH SERVICES ORGANIZATIONS. (2 units). First term. Peters, David; Ward, William. Jointly offered with the Department of Health Policy and Management.

Explores a variety of settings in which to apply concepts learned in the course "Managing Health Services Organizations". Examines the following: (1) organizational design and how to evaluate an organization from the perspectives of open systems, (2) community-focused strategic management, (3) perspectives of key stakeholders and ways organizations meet their expectations, (4) governance in healthcare organizations, (5) the role of conflict in healthcare organizations, (6) preparing, implementing, and communicating a budget that is based on limited resources within a business, (7) performance improvement concepts and tools in a healthcare organization, and (8) the construct of a "balanced score card" for a healthcare organization.

Student evaluation: Student evaluation based on group exercises and class participation.

551.603 FUNDAMENTALS OF BUDGETING AND FINANCIAL MANAGEMENT. (3 units). Second term. Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of Health Policy and Management. Former course number 312.619.

Explains the role of budgeting as a key component of the administrative process. Students learn to develop a budget and evaluate the financial status of a department or operating unit and determine what, if any, corrective actions need to be taken. Presents various analytical methods in management decision making, including benefit/cost ratio analysis, variance analysis, and break-even analysis. Also includes approaches to benchmarking, productivity improvement techniques, and methods for building cost standards.

Student evaluation: Method of student evaluation based on midterm exam, final exam, and participation.

Prerequisites: Introduction to Online Learning.

551.604 QUANTITATIVE TOOLS FOR MANAGERS. (3 units). Second term. Reinke, William; Steinwachs, Donald. Jointly offered with the Department of Health Policy and Management. Former course number 312.641.

Provides current and future managers in health care with an operational understanding of quantitative models to support decisions on resource allocation. Learning objectives include: to develop an understanding of the process of quantitative modeling; to stimulate critical thinking about operational issues in a system; to introduce spreadsheet modeling and simulation as quantitative decision support tools; to identify classes of operations research problems and general approaches to support decisions, such as linear programming, forecasting, decision analysis, scheduling, and inventory control models; to develop a conceptual and computational understanding of these models; and to critically evaluate a published operations research application.

Student evaluation: Homework, case studies and project consisting of an application of an operations research technique covered in the course.

Prerequisites: Intermediate level of Excel competence.

551.605 CASE STUDIES IN MANAGEMENT DECISION-MAKING. (3 units). Third term. Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of Health Policy and Management. Former course number 221.603.

Students analyze problems and develop strategies based on real dilemmas faced by decision-makers. Students formulate positions before class and actively participate in discussion during class. Cases come from both International and U.S. settings, and deal with issues such as: conflict between budget and program offices, working with governing boards, contracting between government and non-government providers, dysfunctional clinics, reforming hospitals, managing local politics, cutting budgets and collaborating in informal organizations. Develops skills in leadership, negotiation, analysis, and communication.

Student evaluation: Participating in class and written assignments.

Prerequisites: 551.601, 551.602, 551.603, and 551.604.

**551.606 STUDIES IN HEALTHCARE
LEADERSHIP AND MANAGEMENT.** (3

units). Fourth term. Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of Health Policy and Management. Former course number 221.604.

This is a follow-up course to 551.605 Case Studies in Management Decision-making. Students analyze problems and develop strategies for the policy, financing, and organization of health care organizations and health systems. Students formulate positions before class and actively participate in discussion during class. Cases come from international and U.S. settings, and include decisions for coverage of vulnerable populations, public-private partnerships, policy advocacy over international development assistance, and regulation of private markets. Develops skills in leadership, negotiation, analysis, and communication. Students using the course as a capstone experience develop and present a case study, or prepare a comprehensive analysis of an organization or healthcare issue presented in one of the cases in 551.603 or 551.604.

Student evaluation: Participation in class, written analysis of a case, and preparation and presentation of a case study.

Prerequisites: 551.605.

Mental Health

Public mental health problems associated with mental, neurologic, psychosocial, alcohol, and drug disorders are increasing dramatically. The Department of Mental Health's mission is to advance understanding of the causes and consequences of mental disorders in populations. It is the site of the Hubert H. Humphrey International Fellowship Program in substance abuse prevention, treatment, and policy, for mid-career leaders from developing countries. The department serves as a Collaborating Center in Public Mental Health for the World Federation for Mental Health. The department provides a focus for research in the distribution, occurrence, prevention, and control of mental disorders, alcohol, and other drug-related disorders, approaching these concerns with an epidemiologic perspective. The department trains leaders in research and administration at the master's, doctoral, and post-doctoral levels in order to continually broaden and deepen the investigation of these issues. The topics of its research programs range from basic issues of nosology to preventive, and clinical trials directed at the antecedents and consequences of mental disorders. In keeping with this mission, the department maintains large population labs for prevention research and epidemiologic studies of the ADM disorders, and it collaborates with other related labs nationally and internationally. At the core of the training in mental health treatment systems are the uses of community epidemiology in research on early targets for primary preventive and clinical intervention; design and evaluation of mental health systems; administration of mental health systems; cost-benefit analysis; and manpower planning and training.

AREAS OF RESEARCH INTERESTS AND RESOURCES

The department emphasizes ongoing research that enriches and stimulates the teaching programs. All students and fellows participate early on in at least one research group of a major research program. Those interested in advanced training can select within or across research areas for their participation. The five major research areas are:

The Hopkins Center for the Prevention of Youth Violence—The center provides a formal infrastructure that facilitates academic community collaborations by integrating research findings with education and training, professional development, and practice

efforts, thus translating research into improved professional practice. The result is an increase in the capacity of local providers, policy makers, and academic researchers to choose among potential interventions, monitor fidelity to specified standards, and increase knowledge concerning effective and ineffective practices and policies. Core funding for the Center is provided by the Centers for Disease Control and Prevention (CDCP).

Epidemiologic Catchment Area—East Baltimore (ECA)—The department is one of five sites of NIMH-funded Epidemiologic Catchment Areas. Research includes epidemiology of mental disorders and health-related behaviors in the early, middle, and later adult stages, as well as research on use of services, and other aspects of public mental health. The Baltimore ECA Follow-up continues study of the natural history of mental disorders with follow-up interviews on the original 3,481 respondents from the 1981 survey.

Alcohol and Drug Use and Dependence—Use of psychoactive substances is a risk factor for mental disorders and health problems. Cognitive characteristics, behavioral characteristics, and social settings are studied as risk factors for drug use and dependence from a developmental perspective. Prevention trials are carried out to test approaches to reducing drug use and related health risks. The department is the site of several National Institute on Drug Abuse (NIDA) studies.

Children's Mental Health Systems and Services Research—Department faculty conduct research on the delivery, organization, financing and effectiveness of children's mental health services. The department also administers the Johns Hopkins Center for the Prevention of Youth Violence, the Hopkins Prevention Research Center, and Baltimore City's "Safe Schools/Healthy Students" initiative; participates in the Center on Organization and Financing of Care for the Severely Mentally Ill; and maintains several databases of use for research projects.

Cognitive Health and Aging—The department offers advanced training in epidemiologic study of the determinants of cognitive health and cognitive disorders in the elderly. Applicants to a doctoral program in this area should have a clinical background or a disciplinary focus in biologic or behavioral science, psychology or neuropsychology, sociology, or a closely related discipline. The doctoral requirements include courses offered in the departments of Mental Health, Health Policy and Management, Epidemiology, and Biostatistics. The doctoral program prepares individuals for research, planning, or evaluation careers related to the prevention or mitigation of cognitive disorders and their consequence in both public and academic

settings. Doctoral candidates interested in research training in this program area should have a bachelor's degree, and results of the GRE or its equivalent should be submitted if the student does not possess a doctoral degree.

Other Resources—The department undertakes a wide range of research, technical assistance, advising, consultation, etc., that overlaps traditional boundaries and is critical to effective mental health, whether clinical or otherwise. The department faculty work in close association with city, state, federal, and international public mental health and substance abuse agencies, and enjoy working relationships with the Maryland State Department of Health and Mental Health and the Baltimore City Health Department. Students have access to faculty and a wide range of courses in other departments here, at the School of Medicine, and at the School of Arts and Sciences.

DEGREE PROGRAMS

Curriculum—The department's curriculum is organized in relation to the following areas of research and teaching:

- Conceptualization of mental health and psychopathology
- Epidemiology of mental disorders and related states of health and illness
- Preventive and clinical trial methods in mental health research
- Epidemiology of alcohol and drug use, and dependence
- Life-span developmental orientation to mental health disorders
- Measurement of psychopathology in populations
- Techniques of evaluation of service systems
- Design, organization, and evaluation of alcohol, drug abuse, and mental health service systems
- Delivery, organization, and financing of mental health services
- Inheritance of mental disorders
- Language disorders and learning disability
- Biostatistical methods for longitudinal studies and preventive trial for mental health research

Master's and doctoral degrees and postdoctoral certificates are offered. Financial support, including tuition, fees, and stipend, is available for well-qualified applicants. The department is able to fund selected doctoral and postdoctoral level individuals through the Psychiatric Epidemiology Training Program, the Child Mental Health Services and Service System Research Training Program, and the Prevention Research

Training Program, supported by the National Institute of Mental Health, and through the Epidemiology of Drug and Alcohol Dependence training program, supported by NIDA. Applicants for studies in the department must be accepted as advisees by one of the faculty as well as meet the requirements for admission to the School. All programs are subject to change and may be modified as appropriate to the applicant's career goals with the advisor's consent.

Master of Public Health

For general MPH candidates and specialists in fields other than mental health, introductory and advanced courses are available in the department, with the goal of increasing the understanding and knowledge base of health personnel in other disciplines and providing a public health approach to the prevention and control of mental disorders and the promotion of mental health. MPH candidates specializing in mental health professions (i.e., psychiatry, psychology, social work, nursing, or other mental health fields). The student may select courses from multidisciplinary areas, with the assistance of his or her advisor. The purpose of the program is to acquaint the student with the concept of total health systems, of which mental health is an integral part; to apply these concepts to the operation of mental health services in various settings; and to review preventive methods of mental health agencies and other professionals. This program may be combined with psychiatric residency training.

Master of Health Science

The Master of Health Science program for candidates in mental health is intended for interested students who have demonstrated competency through prior work or volunteer experience, and who have had at least some undergraduate work in biology, psychology, and mathematics. Students must choose a research focus. All students must take introductory courses in biostatistics, epidemiology, and mental health, as described in the Student Handbook. Other courses, within and outside the department, are required but are selected from several offerings based upon a student's individualized study plan. Five terms of study are required, including a field placement or substantial experience in a research project. The field placement or research project must be formally agreed between the faculty advisor, placement supervisor, and student. Students must submit a ten-page final report describing lessons learned from the experience.

Areas of Concentration for Doctoral and Postdoctoral Trainees

The department has four available areas of research and training related to the interests and research activities of its core faculty. These are the following:

Program in Epidemiology, Prevention, and Treatment of Drug and Alcohol Dependence

This interdisciplinary master's, doctoral, and postdoctoral program provides preparation for leadership in the drug and alcohol dependence field, specifically as it relates to epidemiology and prevention. There is a focus on the relationship between drug dependence and AIDS problems in populations. The doctoral program prepares individuals for careers in academic and applied research in epidemiology, prevention, or treatment program evaluation. Students admitted to the program must master the methods of epidemiology and biostatistics, and have substantive knowledge about drug- and alcohol-specific issues, epidemiology of drug use, and health consequences, including dependence and mental disorders. Students must successfully complete a doctoral research project contributing to knowledge about risk factors for drug dependence, the effects of primary or secondary prevention programs, or some other important aspect of public health that pertains to psychoactive drugs. Applicants to the program should have a bachelor's degree with significant course work in biology, behavioral science, and quantitative methods. Results of GRE or its equivalent must be submitted for consideration for admission if the student does not possess a doctoral degree. The Hubert H. Humphrey fellowship program in drug and alcohol dependence focuses on national policy formulation and research on prevention treatment activities. Professional affiliation with national and state governmental research and policy agencies affords the opportunity for immediate involvement in ongoing activities leading to research paper productivity. Applicants to the fellowship program must have completed training in a relevant field and have experience in the drug or alcohol field. Participants in this program develop an academic plan in consultation with their advisor. This fellowship program leads to a certificate but not a degree.

Program in Psychiatric Epidemiology

This interdisciplinary doctoral and postdoctoral program is affiliated with the departments of Epidemiology and Biostatistics and with the Department of Psychiatry and Behavioral Sciences at the School of Medicine. The goal of the program is to

increase the epidemiologic expertise of psychiatrists and other mental health professionals, and to increase the number of epidemiologists with the interest and capacity to study psychiatric disorders. Graduates are expected to undertake careers in research on the etiology, classification, distributions, course, and outcome of specific mental disorders and maladaptive behaviors. The program is funded with a training grant from the National Institute of Mental Health. Doctoral students take the courses in the department's epidemiology track and complete a dissertation. Postdoctoral fellows take some courses, depending on background and experience, and engage in original research under the supervision of a faculty member.

Program in Children's Mental Health Services Research

The department also focuses on research related to the need for and the delivery, organization, and financing of mental health services, especially as these relate to children. Faculty in the department direct the Johns Hopkins Center for the Prevention of Youth Violence funded by CDC, and the Hopkins Prevention Research Center funded by NIMH. The department also participates in The Center for Research on Services for severe Mental Illness, and has several research databases for research projects. Applicants to a doctoral program in this area should have a clinical background or a disciplinary focus in economics, political science, sociology, or closely related discipline. The doctoral requirements include courses offered in the departments of Mental Health, Health Policy and Management, Epidemiology, and Biostatistics. The doctoral program prepares individuals for research, planning, or evaluation careers in both public and academic settings. Doctoral candidates interested in research training in this program area should have a bachelor's degree, and results of the GRE or its equivalent should be submitted if the student does not possess a doctoral degree.

Program in Prevention Research Training

The program in prevention research training is aimed at increasing the number of university faculty and research staff in mental health agencies who can develop, implement, and teach prevention research. Postdoctoral training is aimed at the preparation of prevention researchers with a public health orientation from the Departments of Psychiatry, Psychology, Human Development, and Sociology. The postdoctoral training includes opportunities for independent research within the Prevention Research Center and

participation in the center's ongoing research. Course work is specifically designed to develop knowledge and skills in preventive intervention strategies, methods of measuring psychopathology in populations, epidemiologic methods for identifying risk factors, prevention research design, and eliciting community and institutional cooperation in preventive intervention research. There is a special focus on overcoming the statistical problems involved in evaluation of preventive interventions. Postdoctoral trainees must have completed training in either psychology, psychiatry, or sociology and demonstrated potential for a research career. The doctoral program prepares prevention research investigators for schools of public health and mental health agency research centers. The doctoral training program consists of extensive course work in prevention theory, epidemiology, and biostatistics; a field placement in a public health agency; participation in prevention-related work groups; and a doctoral dissertation. Applicants to the doctoral program must have a bachelor's degree with course work in biology, social and behavioral sciences, and mathematics. Results of the GRE or its equivalent must be submitted if the student does not possess a doctoral degree.

Core Requirements for Degrees in the Department of Mental Health

First Term

- 330.601 The Nature of Mental Disorder: Detection, Measurement, Classification.
- 330.657 Statistics For Psychosocial Research: Measurement
- 140.621 (m) Statistical Methods in Public Health I
- 340.601 Principles of Epidemiology

Second Term

- 330.603 Epidemiology of Mental Disorders, Alcohol And Drug Problems
- 140.622 (m) Statistical Methods in Public Health II
- 340.602 Intermediate Epidemiology

Third Term

- 330.661 Social And Psychological Processes In The Development of Mental and Behavioral Disorders
- 140.623 (d) Statistical Methods in Public Health III
- 340.603 (d) Cohort Studies: Design, Analysis, and Applications

Fourth Term

- 330.607 Prevention and Control of Mental Disorders: Public Health Interventions
- 140.624 (d) Statistical Methods in Public Health IV
- 340.604 (d) Design and Applications of the Case-control Methods

Doctoral students in Psychiatric Epidemiology may substitute the Biostatistics 140.651-654 series for the 140.621-624 series.

(d) Doctoral programs only

(m) M.H.S. students may choose to substitute 140.611-612 for 140.621-622

Additional Requirements for Doctoral Degrees

Each doctoral track has additional required courses. Consult the departmental academic handbook for a full listing.

Additional Requirements for the Master of Health Science

Students in the MHS must choose nine additional units of electives in the departments of Mental Health, Epidemiology, or Biostatistics, and at least seven other credits in the School.

The M.H.S. requires a field research or administration placement amounting to at least 12 units of special studies, and the submission of a final report which has been approved by both the placement supervisor and faculty advisor.

- 330.810 Field Placement in Mental Health
- 330.840 Special Studies and Research in Mental Health

Mental Health

Faculty data as of April 1, 2004. For current listing, please click here:

<http://faculty.jhsph.edu/mh.cfm>

William W. Eaton, Ph.D.

Interim Chair.

Primary Faculty

James C. Anthony, Ph.D., Sc.M.

Professor. *Mental Health, Mental Hygiene, tobacco, NIDA, NIMH, NIAAA, drug dependence, psychiatric envirome & enviromics generally.*

Michelle C. Carlson, Ph.D.

Assistant Professor. *Dementia, cognitive aging, memory, cognitive activity, physical activity, physical function, IADLs, prevention, hormone replacement therapy, mental health, cognitive frailty.*

Howard D. Chilcoat, Jr., Sc.D., M.H.S.

Associate Professor. *Mental Health, Mental Hygiene, drug dependence, drug abuse, epidemiology.*

Michele Cooley, M.Ed., Ph.D.

Assistant Professor. *Mental Health, Mental Hygiene, Anxiety disorders, community violence, prevention, child psychopathology, ethnic minorities.*

William W. Eaton, Ph.D.

Professor. *Mental Health, psychiatric epidemiology, sociology, depression, schizophrenia, natural history, Behavior and Health.*

Nicholas Ialongo, Ph.D.

Associate Professor. *Mental Health, Mental Hygiene.*

Sheppard G. Kellam, M.D.

Professor Emeritus.

Sharon F. Lambert, Ph.D.

Assistant Scientist. *Mental Health, Mental Hygiene.*

William Latimer, Ph.D., M.P.H.

Associate Professor. *Mental Health, Mental Hygiene, HIV/AIDS, HIV prevention, neuropsychology, neurobehavioral models of HIV and addiction, adolescence, drug abuse prevention and treatment, addictive behaviors.*

John Lawlor, M.A.

Research Associate.

Philip J. Leaf, Ph.D.

Professor. *Mental Health, Mental Hygiene.*

Wallace Mandell, Ph.D., M.P.H.

Professor Emeritus. *Mental Health, Mental Hygiene, Epidemiology of substance abuse with particular focus on implications for national drug srvioces programming.*

Richard A. Miech, Ph.D.

Assistant Professor. *Mental Health, Mental Hygiene, socioeconomic status, life course, structural equation models.*

Hanno Petras, Ph.D.

Assistant Scientist.

George W. Rebok, Ph.D.

Professor. *Mental Health, Mental Hygiene, Life-span developmental psychology, gerontology, prevention research, cognitive neuropsychology, cognitive aging and health, dementia.*

Doreen Rosenthal, M.L.A.

Research Associate.

Carla Storr, Sc.D.

Assistant Scientist. *Mental Health, Mental Hygiene.*

Peter P. Zandi, Ph.D., M.P.H., M.H.S.

Assistant Professor. *Mental Health.*

Joint Appointments

Lauren Abramson, Ph.D.

Assistant Professor in the Department of Psychiatry and Behavioral Sciences of the School of Medicine.

David M. Altschuler, Ph.D.

Principal Research Scientist at the Institute for Policy Studies and an Associate Professor in the Department of Sociology in the Krieger School of Arts and Sciences.

Harolyn Mellicent Edith Belcher, M.D., M.H.S., F.A.A.P.

Assistant professor of Pediatrics in the School of Medicine.

O. Joseph Bienvenu, M.D., Ph.D.

Assistant Professor in the Department of Psychiatry in the School of Medicine.

William R. Breakey, M.D.

Professor of Psychiatry and Behavioral Sciences, School of Medicine.

Michael R. Clark, M.D., M.P.H.

Associate Professor in the Department of Psychiatry and Behavioral Sciences.

Paul T. Costa, Jr., Ph.D.

Professor in the Department of Psychiatry and Behavioral Sciences in the School of Medicine.

Rosa Marie Crum, M.D., M.H.S.

Associate Professor of Epidemiology. *Epidemiology, Addictions; Aging; Alcohol/alcoholism; Depression; Drugs/drug abuse; Epidemiology; Epidemiology, psychiatric; Gerontology/aging; Mental disorders; Mental/emotional health; Psychiatric epidemiology; Psychopathology; Risk factor/analysis.*

J. Raymond DePaulo, Jr., M.D.

Professor of Psychiatry and Behavioral Sciences, School of Medicine.

Gerard Gallucci, M.D., M.H.S.

Assistant Professor of Psychiatry, School of Medicine.

Anil Kr. Ghosh, Ph.D., M.Phil., M.S.

Research Associate in the Department of Molecular Microbiology and Immunology.

James C. Harris Jr., M.D.

Professor of Psychiatry and Pediatrics, School of Medicine.

William T. Howard, M.D., M.S.

Assistant Professor in the Department of Community Psychiatry at the Johns Hopkins Bayview Hospital.

Susan G. Keys, Ph.D.

Associate Professor in the School of Medicine.

Constantine Lyketsos, M.D.

Professor of Psychiatry, School of Medicine.

Paul R. McHugh, M.D.

Professor of Psychiatry and Behavioral Sciences, School of Medicine.

Gerald Nestadt, M.B., B.Ch.

Professor of Psychiatry and Behavioral Sciences, School of Medicine. *Mental Health, Mental Hygiene, Obsessive-Compulsive Disorder, OCD, psychiatry.*

Craig J. Newschaffer, Ph.D., S.M.

Associate Professor in Epidemiology. *Epidemiology, autism; breast cancer; comorbidity; gene-environment interaction.*

Thomas P. O'Toole, M.D.

Assistant Professor in the Division of Internal Medicine of the School of Medicine and the Welch Center.

Peter V. Rabins, M.D., M.P.H.

Professor of Psychiatry, School of Medicine.

Anne W. Riley, Ph.D.

Associate Professor of Health Policy and Management. *Health Policy and Management, child, adolescents, mental health, health services research, health status, measurement, methods.*

Alan Romanoski, M.D., M.P.H.

Associate Professor of Psychiatry, School of Medicine.

David S. Salkever, Ph.D.

Professor of Health Policy and Management. *Health Policy and Management, Economic impacts, econometric models, mental health disability benefits, mental health insurance.*

Jack Samuels, Ph.D.

Assistant Professor of Psychiatry, School of Medicine.

Donald M. Steinwachs, Ph.D.

Professor of Health Policy and Management. *Health Policy and Management, Medical effectiveness, patient outcomes, dicators of outcome, integration of outcomes management systems, managed care, access to care, ambulatory care groups, effectiveness of systems of care, quality profiling, routine management information systems (MIS).*

Departmental Affiliates**Deborah Agus, J.D**

Lecturer.

Amelia M. Arria, Ph.D.

Associate.

Emmalee Setzer Bandstra, M.D.

Adjunct Professor.

John C.S. Breitner, M.D., M.P.H.

Adjunct Professor. *Mental Health, Mental Hygiene.*

C. Hendricks Brown, Ph.D.

Adjunct Professor.

Eric J. Bruns, Ph.D.

Associate.

Jorge Delva, Ph.D., M.S.W.

Adjunct Assistant Professor.

Diana H. Fishbein, Ph.D.

Adjunct Associate Professor.

Joseph Gallo, M.D., M.P.H.

Adjunct Assistant Professor.

Jerome H. Jaffe, M.D., M.A.

Adjunct Professor

Raymond Lorion, Ph.D.

Adjunct Professor.

Lawrence Mayer, Ph.D., M.B., M.S.

Adjunct Professor. *Methodology, biostatistics, psychiatry, epidemiology, methodology, developmental theory, dementia, Alzheimer's disease, environmental exposures.*

Kathleen Ries Merikangas, Ph.D.

Adjunct Professor.

Preben Bo Mortensen, M.D.

Adjunct Professor.

Carles Muntaner, M.D.

Adjunct Assistant Professor.

Kim Nickerson, Ph.D.

Adjunct Assistant Professor.

Pamela L. Owens, Ph.D.

Adjunct Assistant Professor.

Jane L. Pearson, Ph.D.

Adjunct Associate Professor.

Jeanne M. Poduska, Sc.D., M.S.

Associate.

Stephen J. Suomi, Ph.D.

Adjunct Professor.

Neil M. Thakur, Ph.D.

Adjunct Assistant Professor.

Fernando A. Wagner-Echeagaray, Sc.D., M.P.H.

Adjunct Assistant Professor.

Christine Walrath, Ph.D., M.H.S.

Adjunct Assistant Scientist. *Mental Health, Mental Hygiene.*

Nollie Wood, Ph.D., M.P.H.

Associate.

Mental Health

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

330.601 THE NATURE OF MENTAL DISORDER: DETECTION, MEASUREMENT, CLASSIFICATION. (3 units). First term. McHugh, Paul.

Describes the common mental and behavioral disorders, their occurrence and distribution in populations, and factors that affect their incidence and prevalence. Considers economic impact of mental disorders, the patterns of their detection in the community, referral to specialty mental health settings, and treatment. Examples demonstrate use of population research methods to understand etiology, pathogenesis and means of prevention.

Student evaluation: Student evaluation based on class participation and a final exam.

Consent of instructor required.

330.602 EPIDEMIOLOGY OF DRUG AND ALCOHOL DEPENDENCE. (3 units). Third term. Chilcoat, Howard.

Presents an overview of the epidemiology of drug and alcohol dependence and its relevance to public health. Reviews trends in estimates of prevalence and incidence of drug and alcohol use and problems related to use. Examines factors that might influence subgroup variation and health disparities in drug use outcomes using a dynamic approach that addresses changes over time and across the life course. Explores the universe of suspected causal influences and mechanisms ranging from genetic to societal influences using a model in which transitions in stages of drug involvement are influenced by interactions between individual susceptibility and social environmental factors. Presents research methodology and recent innovations in drug and alcohol epidemiologic research. The goal of this course is further understanding of the usefulness of epidemiology for shedding light on the natural history of drug and alcohol use and the relevance of epidemiologic research to basic and clinical research and its importance for informing public health policy.

Student evaluation: Student evaluation based on class participation and/or a final exam.

Prerequisites: 340.601.

330.603 PSYCHIATRIC EPIDEMIOLOGY. (3 units). Second term. Eaton, William. Also offered via the Internet, second term. Jointly offered with the Department of Epidemiology.

Presents the epidemiology of Alzheimer's disease and late life dementias; major depressive disorders and suicidal behavior; anxiety disorders, schizophrenia, and other disturbances of brain function and mental life. Examines operational case definitions, measurement techniques, and sampling strategies to enhance field surveys and risk factor research. Intended for clinical or public health practitioners and administrators acquainted with these illnesses, and specialists in other fields.

Student evaluation: Student evaluation based on class participation, a weekly journal log, and a project. Departmental doctoral students must also enroll for one unit of Special Studies.

Prerequisites: Introduction to Online Learning; prior or concurrent course in epidemiology or biostatistics, or consent of instructor.

Consent of instructor required.

330.607 PREVENTION AND CONTROL OF MENTAL DISORDERS:PUBLIC HEALTH INTERVENTIONS. (3 units). Fourth term. Leaf, Philip.

Identifies risk factors for mental disorders and maladaptation through population-based epidemiologic studies. Examination of empirical tests of preventive and control interventions explores the applicability of public health technologies (health education, legislative regulation, and service delivery system) to the control of risk factors. Examines models for designing prevention and control programs for varying cultural and political systems.

Student evaluation: Student evaluation based on a paper critically reviewing the empirical support for a prevention or service model.

Consent of instructor required.

330.612 INTRODUCTION TO BEHAVIORAL AND PSYCHIATRIC GENETICS. (3 units).

Third term. Zandi, Peter.

Provides an overview of research methods and their application to the study of behavioral and psychiatric genetics. Course begins by briefly introducing necessary concepts in molecular and population genetics. The course then studies designs and analytic methods used to investigate the genetic contribution to human behavior and its disturbances. The study designs covered include the following: family, twin, and adoption studies to evaluate the extent of genetic contribution; segregation studies to determine the mode of inheritance; linkage and association studies to map genes; and other epidemiological designs to elucidate gene-by-environment interactions. These are illustrated through examples of real studies. At the end of the course, the student will be familiar with our current understanding of the role genetic factors play in human behavior, its disturbances, and how our research may further that understanding.

Student evaluation: Student evaluation based on final exam.

330.618* MENTAL HEALTH IN LATER

LIFE. (3 units). Fourth term. Rebok, George. Not offered 2005-2006.

Contrasts the definition, diagnosis, risk factors, natural history, functional implication, and settings of care for the major mental disturbances of late life, identifying gaps in knowledge and research approaches to fill them. Emphasizes measurement issues as applied to the older adult.

Student evaluation: Student evaluation based on class participation and a paper.

Consent of instructor required.

330.622 DEVELOPMENT AND PSYCHOPATHOLOGY OVER THE LIFE SPAN. (3 units). Fourth term. Ialongo, Nicholas; Rebok, George.

Examines childhood, adolescent, and adult behavior and psychopathology emphasizing a developmental life span perspective. Contrasts diagnostic-categorical approaches of population-based epidemiological studies and clinical population studies to the normative, dimensional approach of developmental psychology. The survey of abnormality includes major mental disorders, and developmental deviations and behavior problems that do not meet strict DSM IV/ICD-10 diagnostic criteria, but still present important problems.

Student evaluation: Student evaluation based on in-class mid-term exam and a final exam.

Consent of instructor required.

330.623 NEUROPSYCHOLOGY OF MENTAL DISORDERS. (3 units). Fourth term. Carlson, Michelle.

Examines mental disorders to illustrate neurobiological systems involved in abnormalities of thinking, feeling, and acting. Increases understanding of behavioral disorders, their assessment, neuroanatomical underpinnings, and systemic influences. Themes include mind-brain connections (e.g. stress response, inflammation), and the dynamic balance between brain vulnerability (e.g. Down's Syndrome) and brain plasticity (e.g. recovery from stroke). Reviews some of the most pervasive disorders, discussion (1) clinical and case studies, (2) definitions and diagnostic methods, and (3) epidemiologic evidence regarding etiology.

Student evaluation: Student evaluation will be based on class participation, critical appraisal of weekly readings, and a final examination.

330.630 BEHAVIORAL HEALTH IN THE AGE OF MANAGED CARE. (3 units). Fourth term.

Seminars and group discussions examine the economic and political bases for organization and financing of mental health services; service delivery strategies at community and state levels, and the role of the federal government in such services; the relationship of mental health services to other health and human services; the roles of the various care providers; and service assessment methods.

Student evaluation: Student evaluation based on a paper.

Consent of instructor required.

330.641 PREVENTION AND CONTROL OF ALCOHOL AND DRUG ABUSE. (3 units). Second term. Mandell, Wallace.

Introduces public health responses to health problems associated with the use of alcohol, tobacco, and other psychoactive drugs. Examines the uses of public health data as a basis for public health policy, the selection of target populations, location of prevention and treatment programs, and the evaluation of program efficacy and effectiveness. Speakers present representative programs for prevention and control of ATOD public health problems.

Student evaluation: Student evaluation based on exercises and the review and oral and written defense of a policy review or program evaluation question.

Consent of instructor required.

330.643 ALCOHOL, TOBACCO, OTHER DRUGS AND PUBLIC HEALTH I. (2 units). First term. Departmental faculty.

Presents basic concepts and principles of drug dependence, emphasizing biologic mechanism, pharmacology, and public health research. Covers treatment, prevention, and public policy aspects, and topics such as drug abuse among pregnant women, and HIV/AIDS.

Student evaluation: Student evaluation based on quizzes, a mid-term exam, and a final exam or paper.

Consent of instructor required.

330.644 ALCOHOL, TOBACCO, OTHER DRUGS & PUBLIC HEALTH. (2 units).

Second term. Storr, Carla.

Presents basic concepts and principles of drug dependence, emphasizing biologic mechanism, pharmacology, and public health research. Covers treatment, prevention, and public policy aspects, and topics such as drug abuse among pregnant women, and HIV/AIDS.

Student evaluation: Student evaluation based on quizzes and a final exam or paper.

Prerequisites: None.

Consent of instructor required.

330.645 ALCOHOL, TOBACCO, OTHER DRUGS AND PUBLIC HEALTH III. (2 units).

Third term. Latimer, William W.

Presents basic concepts and principles of drug dependence, emphasizing biologic mechanism, pharmacology, and public health research. Covers treatment, prevention, and public policy aspects, and topics such as drug abuse among pregnant women, and HIV/AIDS.

Student evaluation: Student evaluation based on quizzes, a mid-term exam, and a final exam or paper.

Prerequisites: 330.643 and 330.644.

Consent of instructor required.

330.650 GROUP RANDOMIZED PREVENTION TRIALS. (1 unit). Fourth term.

Anthony, Jim.

Promotes mastery of concepts, principles and methods of group randomized prevention trials. Each session will include a brief overview presentation on key issues, followed by faculty-guided group discussion. This course is a graduate level pro-seminar.

Student evaluation: Student evaluation based on brief oral presentations of reading material and class participation.

330.651 SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES I. (3 units). First term. Mandell, Wallace.

Discusses conceptual and policy issues related to substance abuse in the U.S., including definitions of use and dependence; social and political contexts; scientific bases for public health response; national policy alternatives; public awareness, community action, and school-based approaches to prevention; and theories of treatment. Students give presentations on the extent of substance use and abuse in developing countries, including proposals to mitigate some aspect of substance abuse. Students also prepare a paper on a current topic.

Consent of instructor required.

330.652 SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES II. (3 units). Second term. Mandell, Wallace.

Discusses conceptual and policy issues related to substance abuse in the U.S., including definitions of use and dependence; social and political contexts; scientific bases for public health response; national policy alternatives; public awareness, community action, and school-based approaches to prevention; and theories of treatment. Students give presentations on the extent of substance use and abuse in developing countries, including proposals to mitigate some aspect of substance abuse. Students also prepare a paper on a current topic.

Consent of instructor required.

330.653 SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES III. (3 units). Third term. Mandell, Wallace.

Discusses conceptual and policy issues related to substance abuse in the U.S., including definitions of use and dependence; social and political contexts; scientific bases for public health response; national policy alternatives; public awareness, community action, and school-based approaches to prevention; and theories of treatment. Students give presentations on the extent of substance use and abuse in developing countries, including proposals to mitigate some aspect of substance abuse. Students also prepare a paper on a current topic.

Consent of instructor required.

330.654 SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES IV. (3 units). Fourth term. Mandell, Wallace.

Discusses conceptual and policy issues related to substance abuse in the U.S., including definitions of use and dependence; social and political contexts; scientific bases for public health response; national policy alternatives; public awareness, community action, and school-based approaches to prevention; and theories of treatment. Students give presentations on the extent of substance use and abuse in developing countries, including proposals to mitigate some aspect of substance abuse. Students also prepare a paper on a current topic.

Consent of instructor required.

330.655 FIELD VISITS IN DRUG ABUSE PROGRAM PLANNING. (2 units). First and second terms. Mandell, Wallace.

Visits to local, state, and federal agencies and programs engaged in drug abuse prevention, treatment, research, and policy implementation deepen understanding of national and local policy formulation for the prevention and treatment of substance abuse, and present the array of model programs that exists in the U.S.

Student evaluation: Student evaluation based on a comparative analysis of two modes of treatment or prevention.

Consent of instructor required.

330.657 STATISTICS FOR PSYCHOSOCIAL RESEARCH: MEASUREMENT. (4 units). First term. Miech, Richard. Jointly offered with the Department of Biostatistics.

Presents quantitative approaches to measurement in the psychological and social sciences. Topics include the principles of psychometrics, including reliability and validity; the statistical basis for latent variable analysis, including exploratory and confirmatory factor analysis and latent class analysis; and item response theory. Draws examples from the social sciences, including stress and distress, social class and socioeconomic status, personality; consumer satisfaction, functional impairment and disability, quality of life, and the measurement of overall health status. Intended for doctoral students.

Student evaluation: Student evaluation based on class participation, problem sets, and a final exam.

Prerequisites: 140.621-624, former 140.601-604, or 140.651-654, or consent of instructor.

Consent of instructor required.

330.660 SEMINAR ON METHODS IN PUBLIC MENTAL HEALTH RESEARCH. (3 units). Second term. Chilcoat, Howard.

Targets the development of effective research strategies in public mental health, from the identification research questions to study design and analytic approaches. Presentations and discussions of important epidemiologic studies of major psychiatric disorders will address sample selection, measurement issues, and analytic strategies. Strengths and weakness of these studies are reviewed and recent advances in epidemiologic and statistical methods are considered as alternative approaches for addressing research questions. Advantages and disadvantages of longitudinal, cross-sectional, and multistage research designs and marginal random effects, and latent variable models are considered. Intended for doctoral students.

Student evaluation: Student evaluation based on written critiques of selected research studies and class participation.

Prerequisites: 340.601-604; 140.621-624; or consent of instructor.

330.661 SOCIAL AND PSYCHOLOGICAL PROCESSES IN THE DEVELOPMENT OF MENTAL AND BEHAVIORAL DISORDERS.

(3 units). Third term. Cooley, Michele; Eaton, William.

Examines the major social and psychological theories of mental and behavioral disorders. Psychological models include behavioral, cognitive, family systems, and psychodynamic theories. Social processes studied include social stratification, social integration, social diffusion, social stress, and social learning. The biopsychosocial frameworks include life course development and the diathesis stress model. Major mental and behavioral disorders of childhood and adulthood are studied, including depression, anxiety, eating disorders, conduct disorders, somatoform disorders, and alcohol and drug abuse. Addresses modes of intervention feasible for their prevention and treatment.

Student evaluation: Based on class participation, oral presentation, a research paper and a final exam. For doctoral students in DMH, a research paper and oral presentation is required for the additional unit (1.0) of course credit.

330.666 LONGITUDINAL ANALYSIS WITH LATENT VARIABLES. (2 units). Fourth term. Petras, Hanno.

Builds upon the two-quarter series on Statistics for Psychosocial Research. Analysis with latent variables is a common theme in mainstream statistics, although the term latent variable is typically not used to describe such analysis. The term latent variable is more typically encountered in psychometric analyses of social and behavioral science data, where latent variables are used to represent variables without measurement error or hypothetical constructs measured by multiple indicators. Explores more general features of latent variable analyses as they are related to longitudinal modeling. Topics include latent growth analysis with a combination of continuous and categorical latent variables as well as the inclusion of continuous and categorical variables as predictors and outcomes. Examples for this course are drawn from current investigation in the field of mental health, preventive interventions, and violence research.

Student evaluation: Student evaluation based on active participation and written lab reports.

Prerequisites: 330.657 and 140.658 (2 quarters) or equivalent.

Consent of instructor required.

330.667 MENTAL HEALTH AND THE LAW. (3 units). Fourth term. Agus, Deborah.

Covers a myriad of topics that are of concern to policy makers in the field of mental health. Topics include a review of relevant legislation and regulations in the areas of patient rights, consent and guardianship, financing, governance and forensics. Topics are specifically related to issues facing the public mental health system, including the forensic issues for adults and juveniles and financing laws relating to the funding of the mental health systems. Case studies of the impact of law on mental health might include the impact of Medicaid reimbursement regulations on poverty and depression for single adult males and the impact of registration laws and treating juveniles as adults on the treatment of juvenile sex offenders. Examines how the law has shaped and continues to shape the delivery of behavioral health services to children and adults with mental illness and the impact of these laws on treatment, financing and governance of the public mental health systems.

Student evaluation: Final exam.

RESEARCH STUDIES AND .800 COURSES

Under faculty supervision, students may participate in departmental research, including special studies and research they initiate. Course requirements, number of units, and basis for student evaluation are individually arranged by the supervising faculty, in consultation with the student and his/her advisor.

330.800 MPH CAPSTONE MENTAL HEALTH. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

330.810 FIELD PLACEMENT MENTAL HEALTH. (variable units). First, second, third and fourth terms.

330.820 THESIS RESEARCH MENTAL HEALTH. (variable units). First, second, third and fourth terms.

330.830 POSTDOCTORAL RESEARCH MENTAL HEALTH. (variable units). First, second, third and fourth terms.

330.840 SPECIAL STUDIES AND RESEARCH MENTAL HEALTH. (variable units). First, second, third and fourth terms.

330.850 SS/R: INTERNATIONAL PERSPECTIVES ON PREVENTION AND TREATMENT OF HIV AND DRUG DEPENDENCE. (1 unit). Winter institute. Latimer, William W.

Focuses on three related topics: (1) epidemiology of drug dependence and HIV; (2) adolescent treatment approaches for drug dependence that incorporate HIV prevention strategies; and (3) HIV prevention strategies that target high-risk drug abusing populations. Topics addressed within the context of drug treatment and HIV prevention strategies include relationships between drug use, HIV risk behaviors, and neuropsychological functions; psychiatric comorbidity rates among adolescent drug users, and defining process measures within the context of randomized prevention and treatment programs. Special focus is placed on Integrated Family and Cognitive-Behavioral Therapy as a multisystems treatment for adolescent drug abuse as well as projects underway in South Africa and Russia as a means to address international perspectives.

Student evaluation: Student evaluation based on class participation and/or final exam.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

**140.658 STATISTICS FOR PSYCHOSOCIAL
RESEARCH: STRUCTURAL MODELS.** See
Department of Biostatistics.

* Not offered every year as indicated.

The W. Harry Feinstone Department of Molecular Microbiology and Immunology

The commitment of the Department of Molecular Microbiology and Immunology is to provide students of the School with educational opportunities, graduate training, and research experience in the study of infectious diseases and host response to disease. The department's main goal is to advance the understanding of the basic biological mechanisms involved in disease processes and to apply this knowledge to the solution of public health problems. This goal is accomplished by using a broad, multidisciplinary approach made possible by the varied interests of its faculty. The approach involves studies that range from the population to the molecular level and encompasses the disciplines of ecology, vector biology, immunology, parasitology, virology, bacteriology, structural biology, cell biology, and molecular biology. The major focus of the department is on laboratory-based research, but coordinated research may be carried out in the clinic or in the field.

The department offers several programs leading to either doctoral or master's degrees. The doctoral program (PhD) is intended to prepare students to become independent investigators in the biomedical sciences. The Master of Science degree is offered to students wishing to gain experience in laboratory or field research. The Master of Health Science degree is offered to students wishing to gain an understanding of microbial diseases. Applicants for any degree program should meet the general requirements of the School and have taken college-level courses in mathematics, biology, chemistry, and physics. Prospective students are also required to submit the results of the Graduate Record Examination (verbal, quantitative, and analytical) taken within two years of their application. Applications for September 2005 admission must be submitted by January 15.

For successful completion of the graduate program, students are required to meet Schoolwide requirements as described in the Academic Information chapter. In addition, all candidates for the doctoral and Master of Science degrees are required to take basic courses in virology, parasitology, immunology, vector biology, and bacteriology and to become acquainted with the

research interests of the department by means of short-term laboratory rotations. After acquiring a core of common knowledge relevant to the study of infectious disease and host responses, students specialize in their selected area. Students may take additional courses within the School and the university to prepare themselves for their area of specialization and their thesis research.

The interests of the departmental faculty are broad and overlapping, offering an excellent opportunity for multidisciplinary interaction and for a multifaceted approach to research and training. There are opportunities for research in the United States and abroad.

AREAS OF ACTIVE RESEARCH

Immunology—autoimmune diseases, genetics and immunogenetics of susceptibility to infectious disease, immunological basis of acquired immunodeficiency syndrome (AIDS), virus-induced immunosuppression, vaccine development, immune-mediated protection and recovery from infection.

Viral and Bacterial Infections—epidemiology and biology of human polyomaviruses and papillomaviruses, hemorrhagic fever viruses, viral infections of the central nervous system, human immunodeficiency virus, measles virus, molecular biology of adenoviruses, mycobacterial and enterobacterial infections, and opportunistic infections.

Parasitic Diseases—malaria, toxoplasmosis, schistosomiasis, filariasis, characterization of parasite enzymes and surface membranes; cell biology of parasitic infection; immune response to parasites and its avoidance; immunopathogenesis and genetics of disease susceptibility; and population dynamics in parasitic infections.

Vector-borne Diseases—insect vector competence; genetics; physiology; ecology; control; dynamics of transmission of vector-borne diseases, particularly malaria, Lyme disease and arbovirus encephalitis; and ecology of zoonotic diseases and their vertebrate reservoirs.

The department also participates in special programs for individuals with appropriate backgrounds and career goals. For graduate veterinarians, a curricular option has been developed in collaboration with the Division of Comparative Medicine. This program will enable selected individuals in residency training in that division to concurrently enroll in the PhD graduate program of the Department of Molecular Microbiology and Immunology. There are doctoral-level interdepartmental programs in collaboration with the Departments of Environmental Health Sciences and Epidemiology. For further information, see Academic Information. The educational experience is

enhanced by interdepartmental, collaborative, and cooperative arrangements and programs within the university. Such opportunities exist through the Johns Hopkins Immunology Council and with the Department of Pathology Division of Laboratory Medicine, which offers training in diagnostic microbiology. The department also offers a Master of Health Science degree. This program provides educational opportunities to students who do not wish to pursue an extensive research program but wish to gain greater knowledge within specific areas of the department and to participate in the departmental academic activities. The program has a defined curriculum and requires 9 months in residence. A written essay, which is usually based on a literature search, and a presentation at a departmental seminar are required for graduation. Applicants interested in the MHS degree should request additional information for this program from the department.

The W. Harry Feinstone Department of Molecular Microbiology and Immunology

Faculty data as of April 1, 2004. For current listing,
please click here: <http://faculty.jhsph.edu/mmi.cfm>

Diane E. Griffin, M.D., Ph.D.

Chair of the Department.

Primary Faculty

Silvio Arango Jaramillo, Ph.D., D.V.M.

Research Associate.

Vern B. Carruthers, Ph.D.

Associate Professor. *Molecular Microbiology and Immunology, Toxoplasma gondii, toxoplasmosis, invasion, secretion, proteomics, adhesion, intracellular, integrin, protease, microneme.*

Isabelle Coppens, Ph.D.

Assistant Professor. *Toxoplasma, Plasmodium liver stage, host cell-parasite interactions; nutrient uptake; lipids; cholesterol; cytoskeleton; coat protein; cell biology; drug targeting.*

Richard W. Daniel, B.S.

Research Associate. *Human papillomavirus, cervical cancer, SV40.*

Martin P. Devenport, Ph.D.

Research Associate. *Mosquito, Anopheles gambiae, peritrophic matrix, malaria.*

George Dimopoulos, Ph.D.

Assistant Professor. *Malaria, Anopheles, Plasmodium, innate immunity, transcriptomics.*

Denise L. Doolan, Ph.D.

Research Associate. *Malaria vaccines immunology genome parasitic diseases.*

Abraham G. Eappen, Ph.D., M. Sc.

Research Associate. *Malaria, mosquitoes, Plasmodium-mosquito, interactions, transgenesis.*

Patricia J. Gearhart, Ph.D., M.S.

Associate Professor.

Anil Kr. Ghosh, Ph.D., M.Phil., M.S.

Research Associate.

Gregory E. Glass, Ph.D.

Professor. *VGIS, Remote Sensing, Hantavirus, Lyme disease, Malaria, zoonoses, rodent-borne diseases.*

Thaddeus K. Graczyk, Ph.D., M.Sc.

Associate Research Professor. *Molecular Microbiology and Immunology, enteric, diseases, waterborne parasites, cryptosporidium, parasite transmission, giardia, medical parasitology, avian malaria, human-infectious microsporidia.*

Diane E. Griffin, M.D., Ph.D.

Professor. *Molecular Microbiology and Immunology, HIV, measles, viral encephalitis, vaccines, arboviruses.*

J. Marie Hardwick, Ph.D.

Professor. *Molecular Microbiology and Immunology, Molecular mechanisms of programmed cell death (apoptosis) and its role in neuronal disease and viral pathogenesis.*

Egbert Hoiczyk, Ph.D.

Assistant Professor. *Molecular Microbiology and Immunology, bacterial pathogenesis, infectious disease, yersinia, type III secretion, host-pathogen interactions, signal transduction, structural biology.*

Yu-Chih Hsu, M.D., Dr.M.Sc.

Professor Emeritus.

Sujatha Iyengar, Ph.D., M.S.

Research Associate. *HIV, immunity, vaccine, positron emission tomography, SIV, evolution, chemokine receptors, EBV.*

Marcelo Jacobs-Lorena, Ph.D.

Professor. *Malaria, mosquitoes, transgenesis, Plasmodium-mosquito, interactions, peritrophic matrix.*

Anne E. Jedlicka, M.S.

Research Associate. *Microarray, Genomics, Malaria.*

Gary W. Ketner, Ph.D.

Professor. *Adenoviruses, eukaryotic molecular biology, gene expression, DNA repair, viral genetics, vaccines.*

Kristen V. Khanna, Ph.D.

Research Associate. *HIV transmission, HIV prevention, sexually transmitted diseases, STDs, STIs, reproductive immunology, microbicides, cell-associated virus, adhesion molecules, ICAM-1, epithelium, infectious diseases.*

Sabra L. Klein, Ph.D., M.S., M.A.

Research Associate. *Molecular Microbiology and Immunology, Animal Behavior, Endocrine Disruption, Hantaviruses, Malaria, Neuroendocrinology, Immunology, Infectious Diseases, Phytoestrogens, Psychoneuroimmunology, Sex Differences, Stress.*

Nirbhay Kumar, Ph.D., M.Sc.

Professor. *Molecular Microbiology and Immunology, malaria transmission-blocking vaccine, Recombination, Targeted gene disruption, Coinfections involving malaria parasites and other pathogens (helminths, HIV, TB).*

Joseph B. Margolick, M.D., Ph.D.

Professor. *Human immunodeficiency virus, immune assessment, immune deficiency, T-cells, flow cytometry, cell sorting, pathogenesis of HIV.*

Richard B. Markham, M.D.

Professor. *Molecular Microbiology and Immunology HIV pathogenesis evolution SCID mouse microbicide vaccine.*

Douglas E. Norris, Ph.D., M.S.

Assistant Professor. *Molecular Microbiology and Immunology, vector biology, entomology, population genetics, arthropod genetics, Lyme Disease, malaria, West Nile Virus, biodiversity, tick, mosquito, Rickettsia.*

Beulah E. Perdue Sabundayo, Pharm.D.

Research Associate. *Molecular Microbiology and Immunology, AIEDRP, HIV seroconversion, primary HIV infection, acute HIV infection, HIV adherence, HIV drug interactions.*

Fernando J. Pineda, Ph.D.

Associate Professor. *Bioinformatics, Mass Spectrometry, Protein Identification, Proteomics, Neural Networks, Machine Learning, Signal Processing, Statistical Physics.*

Sean T. Prigge, Ph.D.

Assistant Professor. *Molecular Microbiology and Immunology, malaria, fatty acid biosynthesis, apicoplast, x-ray crystallography, enzymology.*

Magdalena Reissig, M.D.

Associate Professor Emerita.

Noel R. Rose, M.D., Ph.D.

Professor. *Autoimmune Disease Autoimmunity; Cytokines; Thyroiditis; Myocarditis; Coxsackievirus; Myosin; Thyroglobulin.*

Judith Ryon, M.D., M.S.

Research Associate.

Beulah P. Sabundayo

Research Associate. *Molecular Microbiology and Immunology, AIEDRP, HIV seroconversion, primary HIV infection, acute HIV infection, HIV adherence, HIV drug interactions.*

David H. Schwartz, M.D., Ph.D.

Associate Professor. *Molecular Microbiology and Immunology, Immune Response and Viral Evolution in Seroconverters and Long-Term Non-Progressors, and HAART-Treated Patients, HIV Experimental Vaccine Evaluation.*

Alan L. Scott, Ph.D.

Professor. *Molecular Microbiology and Immunology, parasitic nematodes, biology, infections, parasites, filarial nematodes, asthma, allergy, gene expression analysis, genomics.*

Keerti V. Shah, M.D., Dr.P.H.

Professor. *Molecular Microbiology and Immunology, human papillomaviruses, cervical cancer, epidemiology, polyomaviruses.*

Clive J. Shiff, Ph.D., M.Sc.

Associate Professor. *Molecular Microbiology and Immunology, African schistosomiasis, this is a parasitic disease of people caused by an interesting trematode worm which lives in the small blood vessels draining the intestine (Schistosoma mansoni) or the bladder (Schistosoma haematobium).*

William J. L. Sladen, M.D., Ph.D.

Professor Emeritus.

David J. Sullivan Jr., M.D.

Assistant Professor. *Molecular Microbiology and Immunology, Plasmodium, malaria, iron, copper, zinc transport, hemozoin, metal heme crystal, chemotherapy, drug discovery, diagnosis, placental malaria.*

Milan Trpis, Ph.D.

Professor. *Molecular Microbiology and Immunology, Aedes aegypti; Africa; Vector biology; Vector ecology; Vector behavior; Vector competence; Vector borne diseases; Epidemiology; Filariasis; Onchocerciasis.*

Xiao-Fang Yu, M.D., D.Sc.

Associate Professor. *Molecular Microbiology and Immunology, molecular mechanisms of HIV-1 pathogenesis. It is known that people infected with HIV-1 can have dramatically different outcomes.*

Fidel P. Zavala, M.D.

Professor. *Molecular Microbiology and Immunology, malaria, transgenic mice, T-cells, memory, vaccines.*

Guang Wen Zhang, Ph.D.

Research Associate.

Ying Zhang, Ph.D.

Associate Professor. *Molecular Microbiology and Immunology, tuberculosis, mycobacteria, drug resistance, isoniazid, pyrazinamide, dormancy, persistence.*

Joint Appointments

William Bishai, M.D., Ph.D.

Associate Professor of Medicine, School of Medicine. *Molecular Microbiology and Immunology, Impact of Genome Information on Tuberculosis Research.*

C. Lynne Burek, Ph.D.

Associate Professor of Pathology, School of Medicine. *Diagnostic immunology; autoimmunity.*

Patricia Charache, M.D.

Professor of Pathology, School of Medicine. *Bacteria-host interactions in human disease; antibiotic chemotherapy.*

Douglas P. Clark, M.D.

Associate Professor of Pathology, School of Medicine.

Arthur M. Dannenberg Jr., M.D., Ph.D.

Professor of Environmental Health Sciences. *Tuberculosis; BCG; sulfur mustard; cytokines, adhesion molecules; allergic dermatitis; macrophages and lymphocytes; cell mediated immunity (CMI); delayed-type hypersensitivity DTH).*

Barbara Detrick, Ph.D.

Associate Professor of Pathology, School of Medicine.

James D. Dick, Ph.D.

Associate Professor of Pathology, School of Medicine. *Biochemistry and physiology of microbial pathogenesis and antibiotic resistance.*

J. Stephen Dumler, M.D.

Associate Professor of Pathology, School of Medicine.

Homayoon Farzadegan, Ph.D.

Research Professor of Epidemiology. *Epidemiology, infectious diseases, viral diseases transmitted by blood and other body fluids; and epidemiology and natural history studies.*

Carmelita G. Frondoza, Ph.D.

Associate Professor of Orthopedic Surgery, School of Medicine.

Robert H. Gilman, M.D.

Professor of International Health. *International Health, Disease control. Diarrheal and other enteric diseases; multidrug-resistant tuberculosis, parasitic infections; management and training for tropical disease prevention and interventions, community-based clinical trial for drugs; climate factors associated with infectious disease in developing countries.*

Patti E. Gravitt, Ph.D., M.S.

Assistant Professor in the Department of Epidemiology.

David N. Irani, M.D.

Assistant Professor of Neurology, School of Medicine. *Viral Encephalitis, Immune Responses, Central Nervous System, Viral Pathogenesis.*

Richard T. Johnson, M.D.

Eisenhower Professor of Neurology, School of Medicine. *Neurology and virology, nervous system, multiple sclerosis.*

Douglas A. Kerr, M.D., Ph.D.

Assistant Professor of Neurology, School of Medicine. *Neurodegeneration, Neuroregeneration, Transverse Myelitis, Motor Neuron Disease, Spinal Cord, Excitotoxic Injury, Microglial activation, Spinal muscular atrophy (SMA), Amyotrophic Lateral Sclerosis (ALS).*

Kwang Sik Kim, M.D.

Professor of Pediatrics and Chief of Pediatric Infectious Diseases, School of Medicine. *Bacterial infections of the neuro system.*

Mary S. Leffell, Ph.D.

Professor of Medicine, School of Medicine. *Transplantation immunology.*

Yukari Carol Manabe, M.D.

Assistant Professor, School of Medicine.

William G. Merz, Ph.D.

Professor of Pathology, School of Medicine. *Fungal diseases.*

William J. Moss, M.D.

Assistant Research Professor of International Health. *International Health, Disease Control and Prevention, infectious diseases, impact of HIV epidemic on measles control and eradication, pneumonia, neonatal morbidity and mortality in developing countries, child health in complex emergencies.*

John Nicholas, Ph.D.

Associate Professor of Oncology, School of Medicine. *Molecular biology of human herpes virus.*

Jonathan Patz, M.D., M.P.H.

Assistant Professor of Environmental Health Sciences. *Environmental Health Sciences, Air Pollution, Deforestation, Dengue Fever, Ecosystem, El Niño, Geographic Information Systems (GIS), Global Climate Change, Greenhouse Warming, Heat Mortality, Integrated Assessment, Land use, Malaria, Modeling, Remote sensing, Vector-borne diseases, Water-borne Diseases.*

Akhilesh Pandey, M.D., Ph.D.

Assistant Professor in the School of Medicine.

Jonathan Pevsner, Ph.D.

Associate Professor in the School of Medicine.

Fernando P. Polack, M.D.

Assistant Professor of Pediatrics, School of Medicine.
RSV-measles-paramyxovirus-vaccines.

Thomas C. Quinn, M.D.

Professor of Medicine, School of Medicine.

Philip K. Russell, M.D.

Professor of International Health.

R. Bradley Sack, M.D., Sc.D.

Professor of International Health. *International Health, infectious diarrheal diseases, enterotoxigenic Bacteroides fragilis, cholera, enterotoxigenic E. coli, epidemiology and ecology.*

Kellog J. Schwab, Ph.D.

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

Richard E. Semba, M.D., M.P.H.

Associate Professor of Ophthalmology School of Medicine. *Molecular Microbiology and Immunology, vitamin A, relationship of nutrition to immunity and infection, history of nutrition.*

Thomas W. Simpson, M.D.

Associate Professor Emeritus of International Health.

Mark J. Soloski, Ph.D.

Professor of Medicine, School of Medicine.

Alexandra Valsamakis, M.D., Ph.D.

Assistant Professor of Pathology, School of Medicine.

Raphael P. Viscidi, M.D.

Associate Professor of Pediatrics, School of Medicine.

Peter Winch, M.D., M.P.H.

Associate Professor of International Health.
International Health, *Behavior change interventions, community participation, qualitative research methods, vector-borne diseases, malaria, neonatal health, treatment-seeking behavior, compliance with antimicrobial treatment, community health workers, operational research.*

Tzyy-Chouu Wu, M.D., Ph.D., M.P.H.

Professor of Pathology, School of Medicine.

Jonathan M. Zenilman, M.D.

Professor of Medicine, School of Medicine.
Infectious Diseases, AIDS, Sexually Transmitted Diseases, STDs, Hospital Epidemiology, HIV prevention.

M. Christine Zink, D.V.M., Ph.D.

Professor of Comparative Medicine, School of Medicine.

Departmental Affiliates

Ray R. Arthur, Ph.D.

Senior Associate.

Abdu F. Azad, Ph.D.

Associate.

Alfred Buck, M.D., Dr.P.H.

Adjunct Professor. *International health.*

James E. Childs, Sc.D.

Associate.

Paul Converse, Ph.D., M.H.S., M.Sc.

Associate. *Tuberculosis, Leprosy, HIV, AIDS, Immunity, Animal Models.*

Gina A. Dallabetta, M.D.

Associate.

Lawrence Graves

Associate.

Yukari Okamoto, D.V.M., Ph.D.

Senior Associate.

Eyal Talor, Ph.D.

Associate.

Philip E. Thuma, M.D.

Senior Associate.

Molecular Microbiology and Immunology

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

260.600 INTRODUCTION TO THE BIOMEDICAL SCIENCES. (4 units). First term. Burek, C. Lynne; Caturegli, Patrizio; Rose, Noel.

This two-week concentrated course, offered immediately prior to the first term for incoming students without adequate background or experience in the biomedical sciences, presents basic anatomy and physiology through a group process that utilizes learning selected reading assignments, explicit learning objectives, group interaction reinforced by preceptors, and short objective tests with immediate feedback. Lectures focus on basic biological principles relevant to the health of human populations.

Student evaluation: Student evaluation based on short quizzes, class participation, and a final exam.

Prerequisites: Restricted to full-time masters and doctoral students registered for first term.

260.601 BIOLOGICAL BASIS OF PUBLIC HEALTH. (4 units). Fourth term. Offered via the Internet only.

Applies biological principles to problems of public health importance. Principles from population biology, population genetics, molecular biology, and immunology form the basis for lectures on the evolution of disease and on the distribution patterns of diseases observed in populations.

Student evaluation: Student evaluation based on two exams.

Prerequisites: Introduction to Online Learning.

260.608 ADVANCED TOPICS IN AIDS

RESEARCH. (4 units). Fourth term. Yu, Xiaofang.

Lectures will cover topics including HIV life cycle, global HIV/AIDS epidemic, molecular epidemiology of HIV, host and viral factors on HIV transmission and pathogenesis, HIV/AIDS therapy, and HIV vaccine development.

Discussion of related literature follows each lecture.

Student evaluation: Class participation, core discussion, and a final exam.

Prerequisites: PH 260.623 or instructor consent.

Consent of instructor required.

260.611 PRINCIPLES OF IMMUNOLOGY I.

(4 units). First term. Scott, Alan.

Introduces biological concepts of immunology; molecular nature of antigens; molecular basis for antibody and T-cell receptor structure and diversity; complement; hypersensitivity reactions; cellular basis for the immune response; cell-mediated immunity; adhesion molecules and coreceptors cell activation; cytokines and other soluble mediators; major histocompatibility complex (MHC) antigens; tumor immunology; transplantation immunobiology; mechanisms of resistance to microorganisms; tolerance; autoimmunity; and immuno-deficiency.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: A course in advanced biology.

260.612 PRINCIPLES OF IMMUNOLOGY II.

(4 units). Second term. Scott, Alan.

Introduces biological concepts of immunology; molecular nature of antigens; molecular basis for antibody and T-cell receptor structure and diversity; complement; hypersensitivity reactions; cellular basis for the immune response; cell-mediated immunity; adhesion molecules and coreceptors cell activation; cytokines and other soluble mediators; major histocompatibility complex (MHC) antigens; tumor immunology; transplantation immunobiology; mechanisms of resistance to microorganisms; tolerance; autoimmunity; and immuno-deficiency.

Student evaluation: Student evaluation based on mid-term and final exams.

Prerequisites: 260.611.

* Not offered every year as indicated.

260.622* PRINCIPLES OF BACTERIAL INFECTION. (3 units). Fourth term.

Dannenberg-Jr., Arthur. Jointly offered with the Department of Environmental Health Sciences. Next offered 2006-2007.

Introduces major bacterial and rickettsial infections of man, emphasizing their transmission, pathogenesis, and control. Considers bacterial virulence and host resistance; dysentery, typhoid fever, and cholera; syphilis and gonorrhea; Lyme disease; pneumococcal, staphylococcal, and streptococcal infections; typhus; Rocky Mountain spotted fever; plague, anthrax, brucellosis, and tularemia; tuberculosis; leprosy; infections with anaerobic bacteria; mycoplasma infections; and Legionnaires' disease.

260.623 FUNDAMENTAL VIROLOGY. (4 units). First term. Griffin, Diane.

Discusses cellular, molecular, genetic, and immunological principles that govern viral infection. Presents a survey of main virus groups with detailed discussion of several representative human pathogens. Topics include replication strategies, pathogenesis, carcinogenesis, vaccination, and the use of viruses as tools in molecular and cell biology. Emphasizes interactions of viral and host cell processes.

Student evaluation: Student evaluation based on a mid-term and a final examination.

260.624* ADVANCED VIROLOGY. (4 units). Third term. Hardwick, J.-Marie. Not offered 2005-2006.

Includes lectures on a diverse collection of viruses, with emphasis on molecular biology and pathogenesis. Approximately 50% course content consists of student presentations and discussion of primary literature.

Student evaluation: Student evaluation based on class participation and a final exam.

Prerequisites: 260.623 or consent of instructor.

Consent of instructor required.

260.625 SCIENTIFIC METHOD APPLIED TO GRANT WRITING. (2 units). Third term. Schwartz, David.

Reviews elements of Scientific Method (observation, hypothesis information, experimental hypothesis testing, interpretation) in historical contexts, including current goals of NIH. Students learn to identify the elements of scientific method and use them in the standard RO1 grant application (also the basis of many non NIH-grant applications) relevant to their fields of scientific interest. This course is recommended for, but not restricted to PhD students in laboratory sciences. Students wishing to do so have a chance to develop original grant proposals during the period of the course.

Student evaluation: Student evaluation based on the development of essential elements of a grant proposal.

260.626 STI PREVENTION: USING EPIDEMIOLOGY TO INFORM POLICY AND PROGRAM. (4 units). Third term.

Zenilman, Jonathan.

Examines the epidemiology of sexually transmitted infections (STIs), the etiology of the specific diseases, and how these factors are relevant to their control. Emphasizes the behavioral, political and social factors that contribute to STI epidemics, and how consideration of all factors can inform public policy and program development. Reviews the natural history of the infections and laboratory approaches to diagnosis. Discusses factors that facilitate and procedures that tend to control the spread of these diseases and critically reviews selected aspects of existing programs.

Student evaluation: Policy presentation involving powerpoint slides and supporting documentation, class participation, and final examination.

Prerequisites: Epidemiology I or evidence of equivalent knowledge; Biological Basis for Public Health or evidence of equivalent knowledge.

Consent of instructor required.

260.627 PATHOGENESIS OF BACTERIAL INFECTIONS. (4 units). Second term. Markham, Richard; Zhang, Ying.

Presents the mechanism employed by bacteria to establish and maintain infection in the human host and evolution of host resistance mechanisms. Covers host-parasite relationship, bacterial structure and metabolism, pathogenic mechanisms of bacteria, systemic and mucosal immunity, and gram-negative and gram-positive bacteria.

Discussions generally cover gram-negative and gram-positive bacteria with specific lectures on pathogens of particular interest, such as mycobacteria, *Borrelia*, rickettsia, and bacteria associated with sexually transmitted diseases.

Student evaluation: Student evaluation based on a mid-term, final exam, and an optional research paper.

260.628 ADVANCED TOPICS IN BACTERIAL PATHOGENESIS. (3 units).

Fourth term. Zhang, Ying.

Involves readings of the primary literature in bacteriology. Students take turns leading discussions of assigned papers selected from the recent and/or classical bacterial pathogenesis literature.

Student evaluation: Student evaluation based on level and character of class participation.

Prerequisites: 260.627.

260.629 THE SEXUALLY TRANSMITTED DISEASE: THEIR EPI AND CONTROL I. (2 units). Third term. Offered via the Internet only.

Description: same as 260.626. Multi-term, (Third and fourth terms). Part I necessitates enrollment in part II.

Prerequisites: Introduction to Online Learning.

260.630 THE SEXUALLY TRANSMITTED DISEASE: THEIR EPI AND CONTROL II. (2 units). Fourth term. Offered via the Internet only.

Description: same as 260.626. Multi-term, (Third and fourth terms). Part I necessitates enrollment in part II.

Prerequisites: Introduction to Online Learning.

260.632 DIAGNOSTIC PARASITOLOGY. (3 units). First, second, third and fourth terms. Charache, Patricia.

Utilizes permanent slides, and preserved and unpreserved materials to highlight laboratory diagnostic techniques and recognition of the diagnostic stages of amoebae, other protozoa, nematodes, cestodes, and trematodes. Examines characteristics of blood and tissue parasites such as malaria, babesia, hemoflagellates (*Leishmania*, trypanosomes), filaria, *Dracunculi*, *Trichinella spiralis*, *Taxocara canis*, and *Echinococcus*.

Reviews preparative methods. Uses unknown specimens to develop proficiency in identification.

Student evaluation: Student evaluation based on course work and a final exam.

Consent of instructor required.

260.635 BIOLOGY OF PARASITISM. (6 units).

Third term. Graczyk, Thaddeus; Kumar, Nirbhay; Scott, Alan; Shiff, Clive.

Presents a biological basis of parasitic lifestyles including host responses and parasite evasion of host defense mechanisms, transmission, epidemiology, diagnosis, clinical manifestations, pathology, treatment, and control of the major helminthic and protozoan infections of man.

Class discussions based on research papers and topics of fundamental importance to parasitology will involve student participation in a seminar format. Laboratory sessions examine living and preserved parasites, gross pathology, histopathology, and vectors.

Student evaluation: Student evaluation based on a mid-term and a final exam.

260.650 VECTOR BIOLOGY AND VECTOR-BORNE DISEASES. (3 units). Third term. Norris, Douglas; Trpis, Milan.

Presents principles of transmission of human and animal pathogens by insects, mites, and ticks. Discusses biology of major vector groups; clinical manifestations of vector-borne diseases, and their epidemiology, pathology, treatment, and prevention; and direct injury inflicted upon humans by parasitic and venomous arthropods.

Student evaluation: Student evaluation is based on mid-term, final exam, and class participation.

260.652 PRINCIPLES OF PUBLIC HEALTH ECOLOGY. (4 units). Second term. Glass, Gregory; Norris, Douglas.

Applies basic principles of ecology to public health, focusing on factors related to population growth and regulation and the impacts of behavior, genetics, and evolution on disease patterns. Examines the effects of population processes on disease control by vaccination, chemotherapies, and vector control.

Student evaluation: Student evaluation based on two exams and participation in class.

Prerequisites: A course in advanced biology.

Consent of instructor required.

260.656 MALARIOLOGY. (4 units). Fourth term. Kumar, Nirbhay; Shiff, Clive; Sullivan, David.

Presents issues related to malaria as a major public health problem. Emphasizes the biology of malaria parasites and factors affecting their transmission to humans by anopheline vectors. Topics include host-parasite-vector relationships; diagnostics; parasite biology; vector biology; epidemiology; host immunity; risk factors associated with infection, human behavior, chemotherapy, and drug resistances; anti-vector measures; vaccine development; and management and policy issues.

Student evaluation: Student evaluation based on mid-term take-home and final exams.

260.662* PRINCIPLES OF ANIMAL PATHOLOGY AND GENETICALLY ENGINEERED MICE. (4 units). Fourth term. Departmental faculty. Next offered 2005-2006.

Lectures and laboratories present general and systemic pathology, emphasizing basic mechanisms of disease in mammals. Utilizes examples from a wide variety of species, including man. Intended for non-medical graduate students.

Prerequisites: Courses in biology, histology and physiology.

Consent of instructor required.

260.663 BIOLOGICAL RESPONSE TO BIOMATERIALS. (3 units). Fourth term. Frondoza, Carmelita.

Presents biomaterials used in clinical settings such as orthopaedics, cardiovascular, dental, and reconstructive surgery. Experts in these and other areas discuss biological responses (immune and non-immune) to biomaterials and provide state-of-the-art information on public health concerns with respect to the use of biomaterials in medicine.

Student evaluation: Student evaluation based on mid-term and final exams.

260.664 MOLECULAR ENTOMOLOGY. (2 units). Fourth term. Dimopoulos, George; Norris, Douglas.

Provides a broad perspective on the molecular biology of insects and a specific focus on aspects relating to the transmission of insect-borne diseases. Also provides an introduction to insect physiology, developmental biology, genomics and molecular evolution and ecology. Includes several modules addressing molecular mechanisms implicated in insect – host and insect - pathogen interaction, which are essential for disease transmission. Provides background information on essential methodologies used in molecular entomological research and discusses the importance of molecular entomology for the development of disease control strategies. The basic developmental, genetic and genomic focused modules utilize the wealth of knowledge gained from studies in the model insect organism *Drosophila*, while modules focusing on insects' role in disease transmission focus on the mosquito vector of malaria *Anopheles*.

Student evaluation: Two evaluations will be applied in this course: one short paper and one discussion on specific topics.

Prerequisites: Students with a background in molecular biology or biochemistry.

Consent of instructor required.

260.665* BIOLOGICAL BASIS OF AGING. (3 units). Third term. Burek, C. Lynne. Not offered 2005-2006.

Emphasizes the fundamental nature of the aging process, at the molecular, cellular, and organismal level and examines the principles of aging in other animal species which may apply to man. Presents the physiological aspects of the different organs/systems affected by the disease processes (e.g., skeletal, cardiovascular, metabolic, neurobiological, and immunological.) Discusses the theoretical models of aging.

Student evaluation: Student evaluation based on class participation, an oral report, and a final exam.
Consent of instructor required.

260.711* PRINCIPLES OF

NEUROIMMUNOLOGY. (3 units). First term. Irani, David. Not offered 2005-2006.

Covers the origin of specific cells of the central nervous system, immune functions of CNS cells, and trafficking of leukocytes into the CNS with mention of relevant anatomy (blood, brain, barrier, etc). Discusses monocytes, T cells, B cells, cytokines, chemokines, metalloproteinases, and prostaglandins. Explores how these mediators contribute to development, plasticity and pathology of the CNS. Presentations address multiple sclerosis, Creutzfeldt and Jacob disease, HIV dementia and Alzheimer's disease.

Student evaluation: Course participation and a final exam.

260.712 CLINICAL IMMUNOLOGY. (3 units). Fourth term. Talor, Eyal.

Lectures and student-led discussions survey methods for evaluating immune competence and immune function; the immunocompromised host, including congenital and acquired immunodeficiencies such as AIDS; applications of immunogenetics; human transplantation; cancer immunology; allergic and autoimmune disease processes; and prophylaxis of infectious diseases, including vaccines and vaccine development.

Student evaluation: Student evaluation based on mid-term and final exams, a one-page prTcis, and an oral presentation.

Consent of instructor required.

260.714* IMMUNOGENETICS. (3 units).

Fourth term. Leffell, Mary. Not offered 2005-2006.

Presents the genetic basis of immune responsiveness. Reviews the genetic mechanisms responsible for generation of diversity in the genes for immunoglobulins, the T cell receptor molecules, the major histocompatibility molecules, and other key molecules of the immuno-globulin superfamily. Discusses mechanisms and statistical evaluation of immunogenetic associations with susceptibility or resistance to disease.

Student evaluation: Student evaluation based on a mid-term exam, and a final exam, or paper and oral presentation.

Prerequisites: 260.611-612 or introductory course in immunology; introductory course in genetics.

260.717 GRADUATE IMMUNOLOGY: THE IMMUNE RESPONSE. (3 units). Fourth term.

Rose, Noel; Zavala, Fidel.

Presents advanced topics concerning the immunologic system; the cellular basis of the immune response; effector functions of antibody, lymphocytes, and macrophages; regulation of the immune response; and immunologic diseases. Lectures and readings develop a well-rounded view of the interrelated elements comprising the immune system.

Student evaluation: Student evaluation based on class participation and an essay.

Prerequisites: 260.611-612, ME260.709, ME340.703, or consent of instructor.

RESEARCH STUDIES AND .800 COURSES

Molecular microbiology and immunology is multidisciplinary in concept and encourages research involving strength in one area with competence in a related area. Increasing opportunities for research projects are available for individuals trained in more than one discipline. Current examples are: ecology of Lyme disease (ecology/entomology/comparative behavior); genetics of retroviruses (molecular genetics/virology); molecular epidemiology of papillomavirus (virology/molecular biology/epidemiology); immune response to HIV (immunology/virology); immunity to trypanosomes (immunology/parasitology); transmission-blocking immunity in malaria (parasitology/immunology/vector biology); post-infectious autoimmunity (virology/immunology); genetics of autoimmune disease (immunology/genetics); chemically induced autoimmune disease (immunology/toxicology); transmission of malaria and filariasis (entomology/parasitology); molecular virology of adenoviruses (genetics/virology); and newer diagnostic techniques.

Individual research programs are arranged directly with faculty members(s).

260.800 MPH CAPSTONE MOLECULAR MICROBIOLOGY AND IMMUNOLOGY. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

260.801 TOPICS IN IMMUNOLOGY I. (1 unit). First term. Scott, Alan.

Employs a journal club presentation/discussion format to explore advanced topics in basic immunology, the tenants of experimental design in immunology and the theory and practice of immunological methods. This is the core discussion class for 260.611-.612.

Student evaluation: Paper presentation and class participation.

Prerequisites: Restricted to ScM and PhD graduate students in MMI.

Consent of instructor required.

260.802 TOPICS IN IMMUNOLOGY II. (1 unit). Second term. Scott, Alan.

Employs a journal club presentation/discussion format to explore advanced topics in basic immunology, the tenants of experimental design in immunology and the theory and practice of immunological methods. This is the core discussion class for 260.611-.612.

Student evaluation: Paper presentation and class participation.

Prerequisites: Restricted to ScM and PhD graduate students in MMI.

Consent of instructor required.

260.810 FIELD PLACEMENT MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(variable units). First, second, third and fourth terms.

260.811 FIELD STUDIES IN ECOLOGY AND BEHAVIOR. (variable units). Fourth term. Glass, Gregory; Norris, Douglas.

Presents practical aspects of ecology and comparative behavior, particularly in relation to problems encountered in public health and conservation of natural resources. Covers measurement of environmental factors in collecting, marking, and census methods of wild populations; in statistical methods for field ecology; and in special techniques. Students work under the direction of a faculty advisor.

Consent of instructor required.

260.813* SURVIVAL SKILLS FOR ACADEMIA IN THE LAB SCIENCES. (1 unit). Fourth term. Klein, Sabra. Next offered 2005-2006.

Aimed at providing MMI and other lab sciences with the skills necessary to present and publish data and to find post-docs and/or jobs in the laboratory sciences. Topics include time management and organization, preparing effective conference presentations, manuscripts, and curriculum vitae, networking, interviewing, and getting hired.

Student evaluation: Writing assignments.

Consent of instructor required.

260.820 THESIS RESEARCH MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(variable units). First, second, third and fourth terms.

260.821 RESEARCH FORUM IN MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(1 unit). First, second, third and fourth terms. Griffin, Diane.

Departmental students organize and present research findings, resulting from laboratory investigations or literature review, to faculty and fellow students. These oral reports consist of rationale and background of the working hypothesis, experimental design, presentation of results, and analysis in the context of the hypothesis. Usually, each student presents twice a year and weekly attendance is required.

Student evaluation: Presentations are evaluated by two students and two faculty on the basis of content and mechanics of oral communication.

260.822 SEMINARS IN RESEARCH IN MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(1 unit). First, second, third and fourth terms. Griffin, Diane.

Integrates academic training with current research in microbiology, immunology, and infectious diseases. Researchers from JHU and other biomedical research institutions present results of state of the art investigations of microbial diseases of public health significance, emphasizing experimental design and methodology for analysis and discussion.

260.823* SPECIAL TOPICS IN TRANSPLANTATION IMMUNOLOGY. (3 units). Fourth term. Leffell, Mary. Next offered 2005-2006.

Introductory lectures review current understanding of the major histocompatibility complex; the molecular basis of alloreactivity; and immunological mechanisms of allograft rejection, tolerance, and graft versus host disease. Presents and discusses current articles addressing important topics in transplantation.

Student evaluation: Student evaluation based on class participation and a paper reviewing a current topic.

Prerequisites: Introductory course in immunology.

Consent of instructor required.

260.830 POSTDOCTORAL RESEARCH MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(variable units). First, second, third and fourth terms.

260.840 SS/R: MOLECULAR MICROBIOLOGY AND IMMUNOLOGY.

(variable units). First, second, third and fourth terms.

260.841 SS/R: PROTEIN BIOINFORMATICS.

(3 units). Fourth term. Pineda, Fernando; Prigge, Sean T.; Ruczinski, Ingo.

Provides students with an overview of protein bioinformatics. Introduces protein physical properties and structure as well as methods for studying protein structure, i.e. X-Ray Crystallography and Nuclear Magnetic Resonance. The use of protein databases and software for visualizing proteins is introduced. Discusses methods for secondary and tertiary protein structure prediction as well as methods for modeling small-molecule protein interactions and protein-protein interactions. The second half focuses on mass spectrometry and the analysis of high-throughput mass spectrometry data. A survey of mass spectrometry ionization techniques and instrument types is followed by an overview of data analysis techniques for protein identification, de novo protein sequencing, and the analysis of post-translational modifications. Finally, students are introduced to topics in computation mass spectrometry and modeling, which includes the statistical properties of database search, signal modeling, and instrument modeling.

Student evaluation: Five to six homework assignments and final exam.

Prerequisites: Introduction to Molecular Biology (120.602) or consent of instructor.

Consent of instructor required.

260.851 LABORATORY ROTATIONS. (4-8 units). First, second, third, fourth and summer terms. Departmental faculty.

All departmental Sc.M. and doctoral students spend two and three terms, respectively, participating in the research activities of departmental faculty's laboratories. Students select appropriate rotations in consultation with their academic advisors and the departmental Graduate Program Committee.

Student evaluation: Student evaluation based on laboratory performance and an oral presentation of the results of the project.

Consent of instructor required.

260.852 MOLECULAR BIOLOGY

LITERATURE. (2 units). First term. Hardwick, J.-Marie.

Reviews and discusses, in depth, historic and current publications in the field of molecular biology. Required of departmental students concurrently enrolled in ME 260.800, Molecular Biology.

Student evaluation: Students evaluated on their participation in discussions and presentations.

Consent of instructor required.

260.853 ANIMAL PATHOLOGY

LABORATORY. (8 units). First, second, third and fourth terms. Departmental faculty.

Under close faculty supervision, a limited number of students may serve as prosectors on the animal pathology diagnostic service, performing gross and microscopic examinations of diseased animals and tissues submitted by investigators within the institution and by practicing veterinarians. Complete necropsy and histopathology laboratories are available. Rotational assignments vary according to student schedules.

Student evaluation: Student evaluation based on lab assignments.

Prerequisites: 260.662, ME 680.701, ME 300.600, or equivalent.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

120.852 CURRENT RESEARCH

LITERATURE. See Department of Biochemistry and Molecular Biology.

140.662 SPATIAL ANALYSIS AND GIS I. See Department of Biostatistics.

140.663 SPATIAL ANALYSIS AND GIS II. See Department of Biostatistics.

188.670* TISSUE INJURY, INFLAMMATION, AND REPAIR. See Department of Environmental Health Sciences.

223.689 BIOLOGIC BASIS OF VACCINE DEVELOPMENT. See Department of International Health.

340.654 EPIDEMIOLOGY AND NATURAL HISTORY OF HUMAN VIRAL INFECTIONS. See Department of Epidemiology.

550.630 PUBLIC HEALTH BIOLOGY. See Extradepartmental Courses.

* Not offered every year as indicated.

Population and Family Health Sciences

PFHS MISSION STATEMENT

The mission of the Department of Population and Family Health Sciences (PFHS) is to address problems of changing patterns of population growth and reproduction and to assure the health and development of human populations across the life span with special focus on vulnerable populations—mothers and infants, families, adolescents, children with special health care needs, women, and the elderly—in the United States and internationally. Departmental research and practice are integrally linked to academic programs to prepare future researchers and professionals at the doctoral and master's level.

OVERALL ORGANIZATION

The Department of Population and Family Health Sciences is the academic locus of a population-based, life-course development approach to the health of human populations within the Johns Hopkins Bloomberg School of Public Health. The concerns of the department include the growth of the human population, the determinants and consequences of this growth, and the implications of population growth for health. In addition, a major focus is on the health and well-being of populations at specific developmental stages, such as children, adolescents, women in the childbearing years, and the elderly. In particular the department places emphasis on how physical growth, developmental maturation, and aging interact with preventive, curative, and rehabilitative health principles, practices, and policies. The department integrates a demographic and developmental approach to population health.

Graduates are trained as scientists, administrators, and health professionals for careers related to a broad range of population and family health problems. Teaching and research activities focus on human development across the lifespan, the basic reproductive processes, and on biological and social determinants of population change and its social and economic consequences. The department serves as the primary academic base within the University for the core discipline of demography. Faculty and students apply scientific and technical expertise toward addressing issues of family planning and population policy and solving

population problems nationally and internationally. In addition, teaching and research activities of the department advance the understanding of factors that influence the growth and development of children toward optimum functioning as adults. The health of children is further grounded in the context of families and communities. Major attention is given to the assessment of health status and the planning, organization, and administration of community health programs at the local, state, and national level that promote the health of populations across the lifespan.

Finally, the department applies the theory and skills of health communication and advocacy to promote health programs and practices on a global basis with emphasis on reproductive health. The faculty of the department is multidisciplinary, drawn from demography and related social sciences, communication, sociology, epidemiology, public health, economics, family planning administration, medicine, nursing, social work, nutrition, policy analysis, developmental psychology, and related behavioral sciences. The scope of the research and training of the department is global. The research programs address population issues in dozens of countries in Africa, Asia and Latin America, while there is also a large portfolio of research on child, adolescent, and adult health focused on populations in the United States, including the population of children with special health care needs and their families, and those families living in underserved urban settings. International students can expect the department's instructional program to provide the basic considerations of maternal and child health as requisite underpinning for application in various settings. The department is home to important centers for research, teaching and practice. These include the Center for Communication Programs, the Hopkins Population Center, Hopkins Center on the Demography of Aging, the Center for Adolescent Health Promotion and Disease Prevention, and the Women's and Children's Health Policy Center among others.

ACADEMIC PROGRAMS

Master of Public Health

Students enrolled in the Schoolwide Master of Public Health (MPH) program may concentrate their elective time in courses offered by the Department of Population and Family Health Sciences (PFHS). The department is integrally involved in two of the MPH concentrations:

- Child Health
 - Women's and Reproductive Health
- MPH students should see the MPH program for

specific required and elective courses. The courses cover a broad range of population, family health, and public health topics offering a global perspective on the health of populations in both developing countries and the United States. Opportunities are also available for elective experiences working with Maternal and Child Health (MCH) agencies at the local, state, and federal levels.

In addition, MPH students can focus the Capstone Project in PFHS through established course sequences and/or special studies work with individual faculty.

Master of Health Science

The MHS degree is offered as either a one-year or two-year program, depending on the student's background and career goals. In addition, the department offers a one year MHS program in Demography. In general, the MHS is intended to train individuals with a baccalaureate preparation for specialized functions within a broad and diversified set of practice settings in population studies and maternal and child health, including reproductive health/family planning and communication. The purpose of the program is to enhance and strengthen existing skills and knowledge in these areas for students who wish to upgrade their skills or for students who wish to enter the field and view the MHS program as a possible first step to a more advanced program. Through their coursework and experiences with faculty, students acquire a sound orientation to general public health principles and to specific areas of population and family health sciences. Program requirements allow flexibility so that students may tailor their academic program to concentrate in areas such as:

- Child Health and Development
- Health Communication
- Population and Health
- Reproductive, Perinatal, and Women's Health

Graduates of the program are prepared for career positions with such organizations as the Census Bureau, government ministries, non-governmental health organizations in developing countries, state and local MCH agencies in the U.S., managed care organizations, research institutes, health care delivery organizations, advocacy groups, and others.

The one-year MHS program is designed for students who are currently working in their intended field of concentration, have a minimum of two years' full-time health-related or public health-related experience, and wish to upgrade their skills and to improve their potential for advancement in the field. This prior experience would reflect the applicant's involvement in

such areas as health, population systems, evaluation, or health practice. Field placement would be of no particular benefit to these students. Applicants with doctoral degrees in related fields who do not meet the minimum experience requirement will be considered for admission on a case-by-case basis. These applicants should indicate in their statement of goals and objectives how the MHS degree would benefit their professional goals and objectives. Students are required to successfully complete a master's level essay and presentation as part of the departmental seminar series.

The one-year MHS in Demography program is designed for specialized training with a minimum of 32 units in demography courses of 64 units required to complete the program. A research paper is also required. The two-year program is recommended for individuals without prior health-related and/or public health-related experience or whose experience totals less than two years.

The two-year program is intended for students who wish to enter the field and who view the MHS program as a possible first step to a more advanced program or both. It is similar to the one-year program in its academic content during the first year, but adds a four- to six-month supervised field placement in the second year. The field placement provides the opportunity to integrate formal classroom teaching with practical experience in the student's chosen field. Students are required to successfully complete a master's level essay and presentation as part of the departmental seminar series.

Field Experiences—The department places the student in a setting of student interest where training and competence will be enhanced. Field placements are coordinated between the program director, student, and faculty advisor. There are abundant resources within the Baltimore/Washington area from which students can choose to conduct their internship, although many students find internships in other geographic areas, including overseas.

Doctoral Studies

The department offers the degrees of Doctor of Philosophy (PhD) and Doctor of Public Health (DrPH). While each of these degrees enable qualified students to obtain advanced training in one of the disciplines that underlie Public Health, each also is designed with a specific set of criteria for the student seeking entrance into the program. The DrPH is designed for individuals with three years of full-time work experience in the health and/or human services or an MPH and two years of full-time work experience, who intend to assume a leadership position in

the practice of public health. The PhD degree, under the jurisdiction of the University-wide Graduate Board, is intended for the student who is interested in a career in academia and research. The department's doctoral programs are organized by the four academic program areas: Child Health and Development; Health Communication; Population and Health; Reproductive, Perinatal and Women's Health. Doctoral candidates must select one of these areas for academic concentration at the beginning of their program.

The overall structure of the department doctoral programs: All entering students will begin the year with a set of core departmental courses intended to provide common theoretical foundations for the work of the entire department, encompassing biological/developmental/ foundations, demographic/social science foundations, and statistical/epidemiological foundations. Doctoral students will then be required to complete a core set of courses established by each of the academic program areas. The updated specific doctoral requirements are detailed in the Student Handbook, published each year in August, and on the website. All of the academic program areas require doctoral students to do a research practicum.

Doctoral Apprenticeships: The PhD program incorporates a research apprenticeship model to ensure that all students gain both depth and scope in research skills in preparation for embarking on dissertation research. PhD students will be responsible for demonstrating competence in the following areas: critical review of the literature; framing a research question, including rationale, hypotheses, and appropriate research design; data collection, including as needed, instrumentation and measurement; data coding, entry, editing, and creation of data sets; data analysis and interpretation; and manuscript preparation and presentation of results. The apprenticeship for the DrPH addresses most of the same competencies, but is organized consistent with a public health problem-solving paradigm. As such, the DrPH apprenticeship includes problem identification and analysis, development and implementation of intervention strategies, and evaluation. In addition, activities are aimed at integrating public health knowledge and methods through applied leadership and management training and experiences. These competencies can be obtained either through a structured practicum (over multiple terms), working with a single faculty or by rotations with several faculty members, inside or outside the department.

Academic Tracks

The department's academic programs at the doctoral level are organized in four major tracks:

Child Health and Development

The Child Health and Development track provides multidisciplinary training in the growth, development, health, and well being of the infant, child, and adolescent. Developmental considerations are emphasized from conception through adolescence. The biological, behavioral, social, and psychological processes contributing to child health are studied, and the social, environmental, nutritional, physiologic, and economic factors that may enhance or impede well being are considered. The determinants of child health and well being and systems of care are examined within an ecological framework that considers individual, family, and community influences. In addition, the childhood antecedents of health and disease through the life span are explored, health services are reviewed, legislative and policy implications are analyzed, and preventive strategies are critiqued. The program emphasizes the mastery of core knowledge of child and adolescent health, acquisition of methodological and analytical skills and experience in applying these skills to significant health issues in domestic and international settings. The curriculum is sufficiently flexible to allow students to structure a program that will permit both breadth and depth in their area of special emphasis. Instruction is further crafted to reflect student experience, interest, and objectives. Classroom study is enhanced and extended by student participation in a range of faculty-based research, practice, and community projects. A commitment to scholarship, creativity, and independence prepares graduates of the program to assume leadership positions in academic, government, and public health practice settings. The multidisciplinary faculty have backgrounds in developmental psychology, pediatrics, behavioral sciences, communication, demography, economics, nutrition, nursing, public administration, and social work. Research activities of faculty and students focus on advancing the understanding of factors that influence the health and development of infants, children, and adolescents, including children with special health care needs. The research program is enriched by faculty and student involvement in and collaboration with federal, state, and local health agencies, as well as international organizations whose efforts are directed at improving child health and development.

Principle Faculty Coordinators: Dr. Bernard Guyer,
bguyer@jhsph.edu

Health Communication

The Health Communication track encompasses many theories, activities, and programs that occur at many different ecological levels. The program trains students in research, practice, and policy dimensions of health communication using examples from interpersonal communication, community mobilization, and mass media, based on faculty research, programs, and projects. Past and present faculty projects include domestic and international programs, many of which were developed at the Center for Communication Programs (CCP). The doctoral curriculum emphasizes theoretical instruction, including training in communication theory and methods of communication research. The programmatic training includes (1) design, implementation, and management of health communication interventions; (2) evaluation of the impact of health communication interventions; and (3) lessons learned from the field of health communication. Research interests of the faculty include design and evaluation of theory-based communication programs involving mass media, community-based, and interpersonal interventions.

Principal faculty coordinator: Dr. Dina L.G. Borzekowski. Email: dborzeko@jhsph.edu.

Population and Health

The Population and Health track focuses on population structure and change, the implications of population change for public health policy and programs, and the application of demographic methods to public health problems. Students in the track study the nature, determinants and consequences of (1) population birth and death rates; (2) population composition, including such characteristics as sex, age, and marital/ union status; (3) population distribution, including migration patterns and urbanization; and (4) the mathematical and statistical patterns underlying population change. Both predoctoral and postdoctoral programs incorporate training in various social science disciplines (e.g., sociology, economics), epidemiology, and statistics, with training in demography, the primary discipline underlying population studies. The objective of the doctoral level degree is to train researchers for careers in academic, government, and non-governmental settings. Such careers include directing the collection, maintenance, and analysis of population and vital statistics; directing or participating in research divisions of government agencies or non-governmental organizations; developing, implementing, and evaluating intervention programs in the health or population sectors; and research and teach-

ing positions in schools of public health or other academic institutions. Current research interests of the faculty include measuring and explaining levels and trends of fertility, mortality, migration, and population growth; the causes and consequences of population aging; gender and population; adolescent sexuality and fertility; economic development and population growth; quantifying the health and demographic impacts of family planning and child survival programs; the demography of marriage, the family, and child health and well-being; measurement and interpretation of disease burdens; mathematical models of population dynamics; and techniques of demographic analysis. Faculty research projects are active in both developed and developing countries.

Principal Faculty Coordinator: Professor Stan Becker, sbecker@jhsph.edu

Reproductive, Perinatal and Women's Health

The Reproductive, Perinatal and Women's Health track provides integrated training at the doctoral level in research, practice, and policy relevant to human reproduction and its control, health problems and care of the newborn, as well as health problems and services for women of reproductive age. This training focuses on both domestic and international public health problems and their solutions. The program will prepare candidates for careers in research or service provision and evaluation. The objectives of doctoral studies are to educate students who plan a research core in reproductive, perinatal, or women's health or who plan programmatic or practice careers in evaluation, administration, or policy. Students wishing to pursue a research career may choose to work in the areas of epidemiology, health services research, or the social sciences as applied to public health. Faculty providing training in this track have diverse backgrounds ranging from medical, social and behavioral sciences, economics, epidemiology, and demography.

Faculty research and service interests encompass national and international studies of health problems and primary or secondary prevention of reproductive perinatal health problems, and incorporate basic biological sciences or laboratory diagnostics, collection of data from field research, programmatic studies, and secondary data analyses. The substantive areas of interest are (1) reproductive health, including sexually transmitted diseases, HIV/AIDS, determinants and prevention of unwanted pregnancy, abortion or reproductive health related problems, provision of family planning, and contraceptive evaluation; (2) perinatal problems, including determinants and prevention of adverse pregnancy outcomes, provision and evaluation

of perinatal care; and (3) health of women of reproductive age, including health problems unrelated to reproduction, social needs and support, and service provision and assessment.

Principal faculty coordinator: Dr. Donna Strobino.

Email: dstrobin@jhsph.edu.

SPECIALIZED PROGRAMS

Postdoctoral Fellowships

This program is designed to meet the special needs of physicians and others holding a doctoral degree who desire a concentrated period of study in the field of population and family health sciences, but who do not wish to pursue another academic degree. Programs of study are tailored to the special interests of the individual student and may involve one or more years of study. Examples of areas of special study include child development, child welfare, child health, perinatal health, nutrition, demography/reproductive health, family planning, and health care services.

Joint PhD Degree with Anthropology

This program is designed for students interested in interdisciplinary study on the dynamics of fertility change with basic concepts and research strategies in this particular social sciences discipline.

Population and Family Health Sciences

Faculty data as of April 1, 2004. For current listing, please click here: <http://faculty.jhsph.edu/pfhs.cfm>

Robert W. Blum, M.D.

Chair of the Department and Professor.

Primary Faculty

Emily M. Agree, Ph.D.

Associate Professor. *Population and Family Health Sciences, Aging, Demography, Long-Term Care, Disability, Family and Household, Intergenerational Relations.*

Saifuddin Ahmed, M.B.B.S., Ph.D.

Assistant Research Professor. *Population and Family Health Sciences, Reproductive health, reproductive epidemiology, family planning and MCH care, complex population surveys.*

Cheryl S. Alexander, R.N., M.P.H., Ph.D.

Professor. *Population and Family Health Sciences, adolescence; adolescent health; tobacco; behavioral sciences; survey research methods.*

Miriam H. Alexander, M.D., M.P.H.

Assistant Public Health Professor. *Population and Family Health Sciences, Preventive Medicine, Public health professional education and programs.*

Nan Marie Astone, Ph.D.

Associate Professor. *Population and Family Health Sciences, Social demography; sociology; adolescence; life course.*

Marycatherine Augustyn, Ph.D.

Research Associate.

Stan Becker, Ph.D.

Professor. *Population and Family Health Sciences, Couples; reproductive health; reproductive health; data collection; developing countries; geographical information.*

Jane Trowbridge Bertrand, Ph.D.

Professor. *Population and Family Health Sciences, Health communication; evaluation; reproductive health; family planning; policy, Behavior and Health.*

David M. Bishai, M.D., M.P.H., Ph.D.

Associate Professor. *Population and Family Health Sciences, health economics, population economics; family economics; paternity; polygyny; orphans; adolescent health, vaccines; HIV; AIDS; tuberculosis; meningococcal disease; injury control; human papilloma virus; cervical cancer; health equity; AIDS; Nepal; Uganda; road traffic accidents.*

Robert W. Blum, M.D.

Professor. *Adolescent sexuality, chronic illness, and international adolescent health care issues.*

Dina L.G. Borzekowski, Ed.D., Ed.M., M.A.

Assistant Professor. *Population and Family Health Sciences, media, communication, health, television, children, adolescents, Internet, Computers, video, advertising, health communication.*

Heena Brahmabhatt, Ph.D., M.P.H.

Assistant Scientist. *Population and Family Health Sciences, Reproductive Health, HIV, mother-to-child transmission of HIV, placental malaria, malaria, child survival, child mortality, breastfeeding, harm reduction for IDUs.*

Jessica G. Burke, Ph.D.

Research Associate. *Women's health, health behavior, intimate partner violence, pregnancy outcomes, qualitative research, multi-level modeling, health disparities.*

Lien-Ping Chow, M.D., Dr.M.Sc., Dr.P.H.

Professor.

Janet A. DiPietro, Ph.D.

Professor. *Child development, Infant development, Fetal development, Population and Family Health Sciences, Pregnancy, Women, Prenatal, Perinatal, Fetus, Fetal heart rate, Fetal movement, Infant, Infancy, Stress, Maternal stress, Maternal physiology, Temperament, Developmental psychology, Psychophysiology, Behavior and Health.*

Michele L. Dreyfuss, Ph.D., M.P.H.

Assistant Research Professor. *Population and Family Health Sciences, iron deficiency, anemia, pregnancy, pregnancy and perinatal outcomes, micronutrient deficiencies, HIV infection, vertical HIV transmission.*

Mark R. Emerson, B.S.

Research Associate. *Population and Family Health Sciences, Family planning; program evaluation; contraceptive choice; adolescent sexual behavior.*

Fannie Fonesca-Becker, Dr.P.H., M.P.H.

Senior Research Associate. *Community mobilization, community health programs, evaluation, social networks, maternal health, child health, HIV/AIDS.*

Claude Earl Fox, M.D., M.P.H.

Public Health Professor; Director, Urban Health Institute. *Population and Family Health Sciences, urban health.*

Holly A. Grason, M.A.

Associate Public Health Professor. *Population and Family Health Sciences, child health policy, women's health policy, CSHCN.*

Ronald H. Gray, M.B.B.S., M.F.C.M., M.Sc.

William G. Robertson, Jr., Professor in Population and Family Planning. *Population and Family Health Sciences, Epidemiology; STDs; HIV; pregnancy outcome; contraception; lactation; low birthweight; infant mortality; occupational and reproductive health.*

Bernard Guyer, M.D., M.P.H.

Zanvyl Krieger Professor of Children's Health. *Maternal and child health, children's health, children's development, infant mortality, immunization, community pediatrics, childhood injury, preventive health, public health, Title V, state health agencies, disparities in children's health, Population and Family Health Sciences.*

Paul A. Harper, M.D., M.P.H.

Professor Emeritus.

Kenneth H. Hill, Ph.D.

Professor. *Population and Family Health Sciences, Child Mortality, fertility, maternal mortality, population dynamics.*

Michelle J. Hindin, Ph.D., M.H.S.

Assistant Professor. *Women's health, Adolescents, gender, international, household decision-making autonomy and power.*

John F. Kantner, Ph.D.

Professor Emeritus.

Robert Kambic, M.S.H.

Associate Scientist. *Population and Family Health Sciences, Public Health Informatics, Distance Education, Health Evaluation, Computers in Public Health, Health Information Systems, Natural Family Planning, Roman Catholics.*

Young J. Kim, Ph.D.

Professor. *Population and Family Health Sciences, Effects of Diet and Sodium Intake on Blood Pressure, Subgroup Analysis of the DASH-Sodium Trial.*

Marjorie Koblinsky, Ph.D.

Senior Scientist.

Michael A. Koenig, Ph.D., M.A.

Associate Professor. *Population and Family Health Sciences, Determinants and reproductive health consequences of domestic violence.*

Xianbin Li, Ph.D., M.H.S., M.S.

Research Associate. *Population and Family Health Sciences, demography, STD, HIV/AIDS, epidemiological study, statistical analysis, biostatistics.*

Benjamin V. Lozare, Ph.D.

Senior Associate. *Cost-effectiveness of health communication campaigns; conflict management in health communication programs; development of health communication training programs in developing countries.*

Michael J. McQuestion, Ph.D., M.P.H.

Assistant Professor. *Population and Family Health Sciences, demography, maternal and child health, mortality, health behaviors, social effects, program evaluation, multilevel modelling.*

Cynthia Minkovitz, M.D., M.P.P.

Associate Professor. *Population and Family Health Sciences, child development; community pediatrics; maternal depression; children's health care utilization; preventive services; women's multiple roles; provider behavior; health systems reform.*

W. Henry Mosley, M.D., M.P.H.

Professor. *Population and Family Health Sciences, population change, health policy, demographic and epidemiological change, developing countries, health transition, disease control priorities, child survival, family planning, international health, distance education.*

Patricia O'Campo, Ph.D.

Professor. *Population and Family Health Sciences, Women's health, Intimate partner violence, Multi-level Modeling, Infant mortality, Social epidemiology, Pregnancy, Public Health, Smoking Behavior, Statistics, Violence, AIDS.*

Gbolahan Afolabi Oni, Ph.D.

Senior Research Associate. *Population and Family Health Sciences, Social Determinants of fertility, Unmet Need, Demands for contraceptives, Males Reproductive Health, breastfeeding, diarrhea disease, sub-saharan Africa.*

David M. Paige, M.D., M.P.H.

Professor. *Population and Family Health Sciences.*

Phyllis Tilson Piotrow, Ph.D.

Professor. *Population and Family Health Sciences, health communication.*

Rowland V. Rider, Sc.D.

Professor Emeritus.

Kathleen M. Roche, M.S.W., Ph.D.

Assistant Scientist. *Population and Family Health Sciences, Adolescent health and development; low-income families with adolescents; neighborhood effects; parenting.*

Ismail A. Sirageldin, Ph.D.

Professor Emeritus.

Cynthia K. Stanton, M.P.H., Ph.D.

Assistant Public Health Professor. *Maternal mortality; Safe Motherhood, maternal morbidity; perinatal mortality; perinatal morbidity; developing countries; evaluation of Safe Motherhood programs.*

Rob Stephanson, Ph.D., M.Sc.

Research Associate.

Donna M. Strobino, Ph.D.

Professor and Deputy Chair. *Population and Family Health Sciences, Social demography; mortality and morbidity in the perinatal period; effect of health programs on perinatal health status; adolescent pregnancy.*

Amy Ong Tsui, Ph.D., M.A.

Professor.

Amita Bhatt Vyas, Ph.D., M.H.S.

Research Associate.

Shigui Weng, M.D.

Research Associate.

Laurie Schwab Zabin, Ph.D.

Professor. *Population and Family Health Sciences: social science and policy implications—domestic and international—of contraception, abortion, sterilization and adolescent sexual behavior and pregnancy; adolescent pregnancy prevention programs; family planning policy and programs.*

Joint Appointments

Jean R. Anderson, M.D.

Associate Professor of Gynecology and Obstetrics, School of Medicine.

Karin J. Blakemore, M.D.

Associate Professor of Gynecology and Obstetrics, School of Medicine.

Benjamin Caballero, M.D., Ph.D.

Professor of International Health. *Obesity, pediatrics, malnutrition, international nutrition, International Health, obesity, malnutrition, amino acid metabolism, energy metabolism.*

Tina Lee Cheng, M.D., M.P.H.

Associate Professor in the School of Medicine.

Andrew J. Cherlin, Ph.D.

Professor of Sociology, School of Arts and Sciences.

Robin Chernoff, M.D.

Assistant Professor of Pediatrics, School of Medicine.

Pamela Donohoe, Sc.D.

Assistant Professor in the Department of Pediatrics, School of Medicine.

George J. Dover, M.D.

Professor of Pediatrics, Medicine, and Oncology, School of Medicine.

Jonathan Ellen, M.D.

Associate Professor of Pediatrics, School of Medicine.

Harold E. Fox, M.D.

Professor of Gynecology and Obstetrics, School of Medicine.

Andrea C. Gielen, Sc.D.

Professor of Health Policy and Management. *Health Policy and Management, Behavioral Studies, Behavior and Health, Intervention Research, Injury Prevention, Health Education, Child/Maternal Health, Health Promotion, HIV/AIDS, Women's Health, Domestic Violence.*

Elizabeth Holt, Dr.P.H.,M.S.P.H.

Associate in the Department of International Health.

Alain Joffe, M.D., M.P.H.

Associate Professor of Pediatrics, School of Medicine.

D. Lawrence Kincaid, Ph.D.

Associate Scientist of Health Policy and Management.

Kristen H. Kjerluff, Ph.D.

Associate Professor of Gynecology and Obstetrics, School of Medicine.

Tama Leventhal, Ph.D.

Assistant Research Professor in the School of Medicine.

Ronald Magarick, Ph.D.

Assistant Professor of Gynecology and Obstetrics, School of Medicine.

Michèle M.M. Mazzocco, Ph.D., M.Ed.

Associate Professor in the Department of Psychiatry and Behavioral Sciences in the School of Medicine.

Robert A. Moffitt, Ph.D.

Professor of Economics, School of Arts and Sciences.

Wanda Nicholson, M.D., M.P.H.

Assistant Professor, jointly appointed in the Department of Gynecology and Obstetrics in the School of Medicine. *Population and Family Health Sciences, health services research, women's health care, perinatal health, epidemiology.*

Mathuram Santosham, M.D., M.P.H.

Professor of International Health. *Tobacco, International Health, Epidemiologic studies of enteric infections; improved oral rehydration therapy, field testing of vaccines, h. influenzae tybe b, pneumococcal, neotal health.*

Janet R. Serwint, M.D.

Associate professor of Pediatrics, School of Medicine.

Phyllis Sharps, R.N., Ph.D.

Associate Professor of Community Health, School of Nursing.

Jeffrey M. Smith, M.D., M.P.H.

Assistant Professor in the Department of Gynecology and Obstetrics in the School of Medicine.

Barbara H. Starfield, M.D., M.P.H.

Professor of Health Policy and Management. *Primary care; specialty care; coordination of care; equity in health; effectiveness of health services; health status assessment; co-morbidity; case-mix; child health services research; health policy; health professional policy; primary care policy; international health services.*

Taha El Tahir Taha, Ph.D., M.B.B.S., M.P.H., M.C.M.

Associate Professor of Epidemiology. *Africa, AIDS, Antiretrovirals, Epidemiology, Infectious Diseases, Malaria, Malawi, Microbicides, Perinatal HIV Transmission, Sexually Transmitted Diseases.*

Frank Witter, M.D.

Associate Professor of Gynecology and Obstetrics, School of Medicine.

Departmental Affiliates

Adrienne Allison, M.A., M.P.A.

Associate.

Souleymane Martial Leonard Barry, M.D.

Senior Associate.

Peter Beilenson, M.D., M.P.H.

Associate.

Luis Ramiro Beltrán, Ph.D.

Senior Associate.

Marc G. Boulay, Ph.D., M.Sc.

Associate, Center Communications Programs.

Susan J. G. Brechin, Dr.P.H., M.P.H., B.S.N.

Associate.

Yvonne L. C. Bronner, Sc.D., R.D., L.D.

Adjunct Assistant Professor.

Margaret Caughy, Sc.D.

Adjunct Assistant Professor.

Ming-cheng Chang, Ph.D.

Senior Associate.

C. Patrick Chaulk, M.D., M.P.H.

Associate.

Patrick L. Coleman, M.A.

Associate.

Woodrow Dellinger, Jr., M.S., M.P.H.

Associate. *Population and Family Health Sciences, Maternal and Child Health, Special Needs Children.*

Esta de Fossard, M.Ed.

Associate.

Felton (Tony) James Earls, M.D.

Adjunct Professor.

Barbara de Zalduondo, Ph.D.

Adjunct Assistant Professor.

Maria-Elena Figueroa, Ph.D.

Senior Associate.

Eric M. Fine, M.D., M.P.H.

Lecturer.

Judith Gallagher, R.N., Ed.M., M.P.A.

Lecturer.

Janice L. Genevro, Ph.D.

Associate.

Julianna S. Gonen, Ph.D.

Associate.

Melissa Hawkins, Ph.D., M.H.S.

Lecturer.

Catherine A. Hess, M.S.W.

Senior Associate.

Nancy A. Hodgson, Ph.D., M.S.N.

Associate.

Isabelle O. Horon, Dr.P.H., M.P.H.

Associate.

Jacqueline A. Horton, Sc.D.

Lecturer.

Baofeng Huang, M.A.

Associate.

Ellen M. Hutchins, M.P.H., Sc.D., M.S.W.

Lecturer.

Henry T. Ireys, IV, Ph.D.

Adjunct Associate Professor.

Karin Johnson, Dr.P.H.

Senior Associate.

Thomas Kane, Ph.D.

Adjunct Assistant Professor.

Onur Karabacak, M.D.

Associate.

Young Mi Kim, Ed.D.

Senior Associate.

Mark A. Klebanoff, M.D., Ph.D.

Associate.

Gary L. Lewis, M.A.

Associate.

James A. Litch, M.D., D.T.M.&H.

Associate.

Benjamin Lozare, Ph.D., M.S.

Senior Associate. *Population and Family Health Sciences, Cost-effectiveness of health communication campaigns, application of communications technology to distance education and training, leadership and management as applied to health programs.*

Enriquito L. Lu, M.D., M.P.H.

Associate.

Pamela F. Lynam, M.B., B.S., M.R.C.G.P.

Associate.

Noel McIntosh, M.D., Sc.D.

Senior Associate.

Debra Mekos, Ph.D.

Assistant Professor. *Population and Family Health Sciences, adolescence, child development, community-based prevention, urban neighborhoods.*

Farid Midhet, M.B.B.S., M.P.H., Dr.P.H.

Associate.

Madlyn C. Morreale, M.P.H.

Associate.

Constance Nathanson, M.D., M.P.H.

Assistant Professor. *Population and Family Health Sciences, Sociology; reproductive behavior; gender; health; mortality; public health policy.*

Nandini Maria Oomman, Ph.D.

Associate.

Susan Panny, M.D.

Senior Associate.

Geri L. Peak, Dr.P.H.,M.P.H.

Associate.

Deborah F. Perry, Ph.D., M.A.

Lecturer.

Manju Rani, Ph.D., M.B.B.S.

Associate.

Steven J. Reynolds, M.D., M.P.H., F.R.C.P.C.

Associate.

José G. Rimón II, M.A.

Senior Associate.

David L. Rowland, Ph.D.

Senior Associate.

Gary B. Saffitz, B.A.

Associate.

Albert P. Sarno, M.D., M.P.H., F.A.C.O.G.

Adjunct Associate Professor.

Willibrord V. Shasha, M.D., M.P.H.

Associate.

Triono Soendoro, M.D., Ph.D.

Senior Associate.

Alan L. Sorkin, Ph.D.

Senior Associate. *International Health.*

Kai Spratt, Ph.D., M.P.H., B.S.N.

Associate.

J. Douglas Storey, Ph.D., M.A.

Senior Associate.

Barbara W. Sugland, Sc.D., M.P.H.

Senior Associate.

Richard L. Sullivan, Ph.D.

Senior Associate.

Daniel Taylor-Ide, Ed.D.

Senior Associate.

Linda Thompson, Dr.P.H.

Associate.

Carol R. Underwood, Ph.D., M.A.

Senior Associate. *Population and Family Health Sciences, Population; fertility; family planning, reproductive health, Behavior and Health.*

Karen VanLandeghem, M.P.H.

Senior Associate.

Susan Russell Walters, R.N., Dr.P.H.,M.P.H.

Lecturer. *Population and Family Health Sciences, Program evaluation; Community-based program evaluation; School Health; Evaluation methods; Coordinated School Health; Public Health Nursing.*

Maria Wawer, M.D., M.H.Sc.

Adjunct Professor.

Robin Weinick, Ph.D.

Associate.

James Williams, B.A.

Associate.

Rebeca Wong, Ph.D.

Adjunct Associate Professor.

Population and Family Health Sciences

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at

<http://commprojects.jhsph.edu/courses/>

380.600 PRINCIPLES OF POPULATION CHANGE. (4 units). Second term. Hill, Kenneth; Tsui, Amy.

Provides students with a basic understanding of the science of demography and health implications of major population issues in the contemporary world. Students explore population changes over time; elements of demography; child survival and mortality; family and households and demographic change; the demography of social and economic inequality, role of women, urbanization, migration and fertility. Finally, students examine world demographic patterns, synthesizing the data and issues surrounding the importance of population to public health.

Student evaluation: Student evaluation based on exercises, a midterm assessment, and a final exam.

380.603 DEMOGRAPHIC METHODS FOR PUBLIC HEALTH. (4 units). Second term. Agree, Emily. Former course number 320.616.

Prepares students to use demographic methods to address specific public health problems, identify and estimate populations at risk, and aid in forecasting health service needs, using a combination of lectures, labs, and case studies. Methods covered include population projections and period life tables.

Student evaluation: Evaluation will be based on three take home assignments and an in-class final exam.

380.604 PRINCIPLES OF HEALTH AND DEVELOPMENT ACROSS THE LIFE SPAN. (4 units). First term. Astone, Nan; Guyer, Bernard. Also offered via the Internet, first term.

Introduces and examines the basic principles which guide growth and development and the health of individuals across the lifespan, from the prenatal period through senescence. Presents methodological, conceptual and substantive issues necessary for understanding and evaluating empirically based information about growth, development and health at different stages of life and from different academic perspectives. Course covers several themes, including contributions of biological and environmental factors to health and human development, measuring the health of individuals in communities, understanding determinants and consequences of health and development across the lifespan, measuring population health and assessing the implications of health disparities.

Student evaluation: Student evaluation based on class participants and written assignments.

Prerequisites: Introduction to Online Learning.

380.611 EVALUATION RESEARCH I. (4 units). Third term. Bertrand, Jane. Former course number 380.621.

Familiarizes students in different types of program evaluation, including needs assessment, formative research, process evaluation, monitoring of outputs and outcomes, impact assessment, and cost analysis. Students gain practical experience through a series of exercises involving the design of a conceptual framework, development of indicators, analysis of computerized service statistics, and development of an evaluation plan to measure impact. Covers experimental, quasi-experimental, and non-experimental study designs, including the strengths and limitations of each.

Student evaluation: Student evaluation is based on five exercises.

380.612 EVALUATION RESEARCH II. (4 units). Fourth term. Walters, Susan. Former course number 380.622.

Focuses on the application of evaluation activities for women and children's health programs and policies. Five intensive case studies concerning needs assessment, program monitoring, process and outcome evaluation, and cost effectiveness comprise the foundation of this course. Each case study reflects different types of evaluation strategies and students learn to develop and select evaluation designs, methods, indicators, and analyses.

Student evaluation: Student evaluation is based upon short papers, class discussions, and presentations concerning the case studies.

Prerequisites: 380.611.

380.613 EVALUATION RESEARCH III. (4 units). Fourth term. Koenig, Michael. Former course number 380.659.

Introduces students to the concepts, study designs, and methodologies for monitoring and evaluating international family planning programs, with extensions to other areas of reproductive health. Lectures cover both qualitative and quantitative evaluation approaches, with an emphasis on both monitoring and impact assessment. Emphasis is balanced between conceptual issues, introduction to specific evaluation methods, and empirical applications. Focus is on international family planning and reproductive health service programs, with direct applicability to U.S.-based programs. Equips students with the tools to undertake real-life monitoring and evaluation of service programs.

Student evaluation: Student evaluation based on lab assignments and a final exam.

Prerequisites: 380.611 or consent of instructor.

380.614 EVALUATION RESEARCH IV. (4 units). First term. McQuestion, Michael.

Focuses on practical applications of evaluation theories and concepts. Students theorize and measure program effects on maternal and child health behaviors and outcomes. Emphasis is on formulating and testing hypotheses, manipulating actual datasets and dealing with selection, endogeneity and other common methodological problems.

Student evaluation: Student evaluation will be based on class attendance and participation, bi-weekly exercises and final small-group reports.

Prerequisites: 380.612 and 380.613 (PFHS Evaluation sequence) and either 140.611-12, 140.622-23 or 140.653-54 (Biostatistics sequence) or consent of instructor.

Consent of instructor required.

380.623 ADOLESCENCE AND ADOLESCENT HEALTH. (3 units). Second term. Blum, Robert. Former course number 280.618.

Lectures on research findings and issues present biological, psychological, and social aspects of normal adolescent growth and development as a framework for viewing a variety of adolescent health problems and their social and biological effects. Also considers programmatic needs of the adolescent.

Consent of instructor required.

380.624 MATERNAL AND CHILD HEALTH LEGISLATION AND PROGRAMS. (4 units). Second term. Grason, Holly; Minkovitz, Cynthia. Former course number 280.601.

Analyzes the structure, organization, administration and management of social and health service programs serving the maternal and child health populations. Lectures, discussions, and analysis of current research and practice present the goals and impact of national programs such as Title V MCH/CSHCN, Medicaid/S-CHIP, early intervention, Family Planning, WIC/Nutrition, community/migrant health centers, child welfare, and of privately sponsored programs.

Student evaluation: Student evaluation based on individual written assignments, and a written examination.

380.625 ATTITUDES, PROGRAMS, AND POLICIES FOR CHILDREN WITH SPECIAL HEALTH CARE NEEDS. (3 units).

Third term. Grason, Holly; Minkovitz, Cynthia.
Former course number 280.610.

Examines conceptual and epidemiological issues related to chronic illnesses and disabling conditions of childhood, including social and personal attitudes; epidemiology of serious health conditions; chronic illness or disability in the context of child and family development; implementing and evaluating community based programs; and the structure, function, administration, and management of major US governmental programs that serve children with disabilities and chronic illnesses.

Student evaluation: Student evaluation based on active class participation in seminar format and two written assignments.

380.626 CHILD HEALTH. (3 units). Fourth term. Guyer, Bernard.

Presents case studies to explore risk factors for poor child-health outcomes and to understand factors that promote optimal health for children, from infancy through adolescence. Child-health issues addressed include assessing child health status trends in survival, morbidity, and chronic illness; nutrition; environmental exposures and their consequences; injury and violence; immunization coverage; chronic diseases and disabilities; and access to health care. For each of these topics, the course compares the underlying determinants and problem characteristics for children in the U.S. and other advanced nations, as well as for those in developing countries. Examines literature from several fields—such as epidemiology, health service research, policy analysis, developmental and social sciences, intervention research.

Student evaluation: Class participation and written assignment.

Prerequisites: Restricted to graduate students.
Consent of instructor required.

380.630 CONTEMPORARY ISSUES IN HEALTH COMMUNICATION. (1 unit). First term. Borzekowski, Dina. Former course number 320.673.

Introduces the role of health communication in public health programs. Features health communication theory; the role of social marketing and mass media; management of communication programs; interpersonal communication; social networks and social change; and formative research and evaluation.

Student evaluation: Student evaluation based on class participation.

380.631 HEALTH COMMUNICATION PROGRAMS I. (4 units). Third term. Piotrow, Phyllis. Former course number 320.671.

Focuses on the design, implementation, evaluation, and critique of communication interventions and campaigns designed to change behavior. Emphasizes background analysis (including situation and program analysis; policy, media, and service review; and audience analysis); strategic program design; message development; pretesting; materials production; developing and implementing a research-based distribution plan; monitoring; evaluation; and interpersonal communication and use of mass media, including "entertainment education" projects, as an integral part of health communication programs. Involves lectures, readings, computer exercises, and carrying out a health promotion program.

Student evaluation: Student evaluation based on projects, and mid-term and final exams.

380.632 HEALTH COMMUNICATION

PROGRAMS II. (4 units). Fourth term. Piotrow, Phyllis. Former course number 320.672.

Focuses on the design, implementation, evaluation, and critique of communication interventions and campaigns designed to change behavior. Emphasizes background analysis (including situation and program analysis; policy, media, and service review; and audience analysis); strategic program design; message development; pretesting; materials production; developing and implementing a research-based distribution plan; monitoring; evaluation; and interpersonal communication and use of mass media, including "entertainment education" projects, as an integral part of health communication interventions. Involves lectures, readings, and computer exercises.

Student evaluation: Student evaluation based on projects, and mid-term and final exams.

Prerequisites: 380.631.

380.633 THEORY AND RESEARCH IN HEALTH COMMUNICATION. (3 units).

Second term. Borzekowski, Dina. Jointly offered with the Department of Health Policy and Management. Former course number 380.670.

Presents basic principles of communication as applied to health behaviors. Presents fundamental concepts of systems, feedback, semantics, and diffusion of innovations to develop a general model of health communication applicable to interpersonal, group, organizational, and mass media contexts. Analyzes and critiques alternative approaches to health communication.

Student evaluation: Student evaluation based on class participation, a paper and final exam.

380.641 GROWTH AND DEVELOPMENT I: FETUS AND INFANT. (3 units). First term.

DiPietro, Janet. Former course number 280.611.

Focuses on the core processes of physical growth and psychosocial development from conception through infancy. Addresses maturation, cognitive, social, and emotional development, and their assessment in the neonate and infant. Prenatal and postnatal risk factors for comprised growth and development are considered, including the effects of prenatal teratogens and postnatal environmental factors.

Student evaluation: Student evaluation based on two examinations.

380.642 GROWTH AND DEVELOPMENT II: PRESCHOOL AND SCHOOL AGE CHILD.

(3 units). Fourth term. Leventhal, Tama.

Focuses on the core processes of growth and development in early to middle childhood. Considers developmental theories, issues and research findings related to physical growth and cognitive, emotional, and social development. Considers appropriate instruments to assess growth and development. Evaluates efficacy of popular early intervention programs designed to enhance development in at-risk populations of children.

Student evaluation: Student evaluation based on written assignment and class participation.

380.643 GROWTH AND DEVELOPMENT III: ADOLESCENCE. (3 units). Third term.

Departmental faculty.

Focuses on the physical, intellectual, social, and emotional development during the second decade of life, with an emphasis on the study of development in context. Provides a comprehensive overview of current research and theory in the field of adolescence.

Student evaluation: Student evaluation based on class participation and a final paper.

380.652 INTERMEDIATE DEMOGRAPHIC METHODS. (4 units). Third term. Becker, Stan. Former course number 320.604.

Covers the advanced uses of Lexis Diagrams; standardization and decomposition, mathematical basis of life tables, multiple decrement life tables, detailed measures of fertility, the matrix formulation of population projection, techniques for projection of the urban population, techniques to estimate the level of undercount in censuses and vital registration, and methodological issues in historical demography.

Student evaluation: Student evaluation based on homework, quizzes, and a final exam.

380.653 STABLE AND GENERAL POPULATION MODELS. (4 units). Fourth term. Kim, Young. Former course number 320.605.

Introduces major models of formal demography, including multiple decrement life tables, multistate models, and stable populations. Considers applications to the analysis of marriage, divorce, and migration.

Student evaluation: Student evaluation based on homework, quizzes, and a final exam.

380.654 DEMOGRAPHIC ESTIMATIONS FROM INCOMPLETE OR INACCURATE DATA. (4 units). Fourth term. Hill, Kenneth. Former course number 320.606.

Focuses on special problems that affect demographic measurement, and essential techniques for demographic studies in developing countries. Reviews typical data deficiencies and errors, describes methods for data evaluation, and explains indirect approaches to the estimation of key demographic parameters, such as child mortality and fertility.

Student evaluation: Student evaluation based on class performance, exercise problems, and a final exam.

380.655 SOCIAL AND ECONOMIC ASPECTS OF HUMAN FERTILITY. (4 units). Second term. Astone, Nan.

Analyzes the correlates of fertility levels in societies and childbearing among individuals and couples. Examines classical theories of fertility change at the societal level and contemporary critiques of these theories. Also examines the determinants of fertility at the individual level, with an emphasis on differences in the timing first birth and total family size by social class and ethnicity in developed and developing countries.

Student evaluation: Student evaluation based on quizzes and exercises.

380.656* SOCIAL, BEHAVIORAL, AND GENETIC DETERMINANTS OF MORTALITY. (4 units). Third term. Agree, Emily. Next offered 2005-2006.

Examines the changing causes of death in human populations with special emphasis on socio-economic factors. Mortality at all ages is considered: from perinatal mortality to deaths from aging and chronic disease. The cause and consequences of mortality change are related to the epidemiologic transition; economic development and inequality; race and poverty; social support and family structure; and changes in morbidity and disability.

Student evaluation: Student evaluation based on laboratory exercises and quizzes.

380.657 ECONOMICS OF MORTALITY, MORBIDITY AND FERTILITY. (4 units). Third term. Bishai, David. Former course number 320.635.

Examines macro- and microeconomic models of mortality, health, and fertility and how they aid in the understanding of the demographic transition, economic growth, the evaluation of health interventions, and in resource allocation. Emphasizes the impact of these models on statistical techniques used to study health and fertility.

Student evaluation: Student evaluation based on a series of short papers.

Prerequisites: Prior course work in economics is suggested.

* Not offered every year as indicated.

380.658 ECONOMICS OF GENDER AND FAMILY. (4 units). Fourth term. Bishai, David. Former course number 320.636.

Examines models of relationships within and between households drawing on game theory. Stresses implications of these models for policies regarding population, migration, and old age.

Student evaluation: Student evaluation based on a series of short papers.

Prerequisites: Prior course work in economics suggested.

380.661 CLINICAL ASPECTS OF MATERNAL AND NEWBORN HEALTH. (3 units). Fourth term. Strobino, Donna. Former course number 280.605.

Presents morbidity and mortality in the mother, fetus, and newborn and the health care practices utilized to prevent, diagnose, and treat this morbidity. Guest speakers in clinical care present lectures from the clinical perspective; course instructors present the public health perspective.

Student evaluation: Student evaluation based on a paper describing a selected health care intervention during the perinatal period and evaluating its effectiveness.

380.662 ISSUES IN PERINATAL RESEARCH. (3 units). Third term. Strobino, Donna. Former course number 280.616.

Discusses the usefulness and limitations of routinely collected data and the analytic and conceptual basis for methodological approaches to the study of infant mortality and morbidity, examining biological and social factors associated with each.

Student evaluation: Student evaluation based on an oral and written critique of a research report, a 7-10 page paper, and class participation.

380.664 REPRODUCTIVE AND PERINATAL EPIDEMIOLOGY. (4 units). Fourth term. Dreyfuss, Michele L.; Gray, Ron. Former course number 320.650.

Focuses on current research, controversial issues and methodological problems in the epidemiology of reproductive and perinatal health. Lectures and analyses of research papers present reproductive health issues such as conception and infertility, contraception and hormone supplementation, and reproductive health cancers as well as perinatal issues such as complications of pregnancy, infections in pregnancy, maternal mortality, adverse pregnancy outcomes, and birth defects.

Student evaluation: Student evaluation based on a presentation, midterm and final exams.

Prerequisites: 340.601 or equivalent.

380.665 FAMILY PLANNING POLICIES AND PROGRAMS. (4 units). Third term. Mosley, Henry. Former course number 320.660.

Introduces issues and programmatic strategies related to the development, organization, and management of family planning programs, especially those in developing countries. Topics include social, economic, health, and human rights rationale for family planning; identifying and measuring populations in need of family planning services; social, cultural, political, and ethical barriers; contraceptive methods and their programmatic requirements; strategic alternatives, including integrated and vertical programs and public and private sector services; information, education, and communication strategies; management information systems; and the use of computer models for program design.

Student evaluation: Student evaluation based on exercise set and a paper.

Prerequisites: 380.600 or consent of instructor.

380.666 WOMEN'S HEALTH. (3 units). Third term. Strobino, Donna.

Presents an overview of the health status of women and preventive strategies to improve their health, primarily in developed countries. Topics include physical and mental health problems, health behavior, and where appropriate, gender differences in health problems and health behavior. Health issues are viewed from both biological and social perspectives. Risk factors for each are discussed as well as effective preventive interventions for women.

Student evaluation: Student evaluations based on a group presentation and a paper.

380.667 WOMEN'S HEALTH POLICY. (2 units). Fourth term. Strobino, Donna.

Provides an overview of selected, timely policy issues related to women's health in both developed and developing countries. Covers the history of selected policy concerns, frameworks for viewing these concerns, and policy concerns related to selected women's health issues such as family planning, welfare reform, employment and workplace conditions, and disabilities. Topics may change yearly depending on the primacy of the topic or issue.

Student evaluation: Student evaluations based on class participation and a paper.

Prerequisites: None.

380.668 INTERNATIONAL PERSPECTIVES ON WOMEN, GENDER, AND HEALTH. (3 units). Third term. Hindin, Michelle.

Examines the ways by which the study of gender informs the study of health in the developing world with a focus on women's health issues. Explores the ways in which gender and sex help us to understand women's health and explain societal patterns of health, disease and well-being. Topics include both reproductive and nonreproductive health issues including mental health and physical health.

Student evaluation: Leading class discussion and literature review/critique.

Consent of instructor required.

380.671 ADOLESCENT PREGNANCY-CAUSES, CONSEQUENCES, INTERVENTIONS. (3 units). Fourth term.

Zabin, Laurie. Former course number 320.624.

Addresses aspects of adolescent fertility, including its social and economic roots, its relationship to cultural change, and its individual, developmental etiology. Explores consequences of early fertility, emphasizing interventions and their assessment and the effects of public policy. Focuses mainly on the U.S., although international aspects of the problem are also explored.

Student evaluation: Student evaluation based on a presentation, an annotated bibliography, and class participation.

Consent of instructor required.

380.681 STRATEGIC LEADERSHIP AND MANAGEMENT IN POPULATION AND REPRODUCTIVE HEALTH. (6 units). Winter institute. Lozare, Benjamin; Mosley, Henry.

Introduces students to core leadership disciplines of personal mastery, mental models, shared vision, systems thinking and team learning. Students will attain skills in promoting institutional change through the analysis of critical constraints, establishing strategic objectives and key moves, and developing a learning organization for program implementation via interactive computer exercises using STARGuide software, small group work and class presentations. This course is designed for policy makers, program managers and academic leaders in international population, family planning and reproductive health programs.

Student evaluation: Student evaluation based on class presentations of small group work and a final project presentation.

Consent of instructor required.

380.690 INTRODUCTION TO DEMOGRAPHIC METHODS I. (2 units).

Third term. Offered via the Internet only.

Description: same as 380.603. Multi-term, (Third and fourth term). Part I necessitates enrollment in part II.

Prerequisites: Introduction to Online Learning.

380.691 INTRODUCTION TO DEMOGRAPHIC METHODS II. (2 units).

Fourth term. Offered via the Internet only.

Description: same as 380.603. Multi-term, (Third and fourth term). Part I necessitates enrollment in part II.

Prerequisites: Introduction to Online Learning.

380.711 ISSUES IN SURVEY RESEARCH. (3 units). Third term. Alexander, Cheryl. Former course number 280.627.

Presents issues relevant to survey design and conduct and identifies alternative strategies for addressing them. Explores the use of a survey as the primary data collection method in health research, and utilizes literature to examine instrument construction, response rates, interviewer and respondent biases, compliance and informed consent, and costs associated with various survey methods. Supplements 340.717 or other course work in survey research.

Student evaluation: Student evaluation based on class participation and a paper.

Prerequisites: 340.601, 140.601-602 and appropriate experience with health surveys.

380.712 METHODS IN ANALYSIS OF LARGE POPULATION SURVEYS. (3 units). Fourth term. Ahmed, Saifuddin. Jointly offered with the Department of Biostatistics. Former course number 320.619.

Introduces the practical aspects of design and analysis of large sample surveys. Covers statistical issues of complex surveys involving stratification and clustering, methods of handling missing data, weighting, sample size estimation and allocation, design-based analysis of frequency tables and multivariate methods for complex surveys. Emphasizes applied, rather than theoretical derivation.

Prerequisites: 140.640 or consent of instructor.

380.713 MONITORING AND EVALUATION OF TRAINING PROGRAMS. (1 unit). Third term. Griffey, Susan. Former course number 320.662.

Focuses on training needs assessment, monitoring and evaluation during training, and post-training evaluation based on the model developed by Kirkpatrick. Each session examines a particular aspect of training evaluation, using examples from international clinical reproductive health and family planning training programs, and reviews a case study and the data collection instruments used. Large- and small-group activities supplement short didactic presentations. **Student evaluation:** Student evaluation based on presentation of case study results.

380.721 SCHOOLS AND HEALTH. (3 units). Fourth term. Walters, Susan. Former course number 280.603.

Examines the relationship between children's health and their K-12 school experience using the eight components of the CDC/DASH coordinated school health program model as the organizing framework. Topics include history and development of school health, relationship of in-school interventions to students' health, health care access and academic outcomes, school health policy and politics, and the impact of school context on research methodology and findings. Research to promote health and prevent disease is incorporated into the course.

Student evaluation: Student evaluation based on class participation, field reports, and a paper.

380.725 SOCIAL ECOLOGY OF

ADOLESCENT HEALTH. (3 units). Third term. Roche, Kathleen. Former course number 280.633.

Examines health as a function of the dynamic interplay between adolescents and their social environment, including family, school, and community. Discusses selected ecological frameworks for understanding contextual influences on adolescent health, as well as current applications of ecological models to research on youth violence, substance use, and early childbearing. Reviews ethnographic and survey research, with attention to the implications of ecological models for designing prevention programs.

Student evaluation: Student evaluation based on a class presentation and a final paper.

380.726 PROBLEM SOLVING FOR IMMUNIZATION PROGRAMS. (3 units).

Second term. Offered via the Internet only.

This course draws from field experience and empirical literature to highlight problems common to immunization programs in both the US and developing countries. Topics covered include measurement, delivery strategies, provider efficiency and creating and sustaining vaccine demand. In a series of exercises, students use actual data, standard software and a proposed problem-solving framework to analyze management, health behavioral and social problems, and formulate appropriate solutions.

Student evaluation: Midterm, final exam and two practical exercises.

Prerequisites: Introduction to Online Learning.

380.731 HEALTH COMMUNICATION

PROGRAMS I. (2 units). Third term. Offered via the Internet only. Former course number 380.616.

Focuses on the step by step design, implementation, evaluation, and critique of communication programs designed to change behavior. Class works in on-line groups to create an actual mini-campaign and use the computer simulation SCOPE to develop a hypothetical campaign in the U.S. Students present their projects at a scheduled on-site session upon return to campus.

Student evaluation: Student evaluation based on exercises, final projects, and SCOPE projects.

Prerequisites: Introduction to Online Learning.

380.732 HEALTH COMMUNICATION

PROGRAMS II. (2 units). Fourth term. Offered via the Internet only. Former course number 380.617.

Focuses on the step by step design, implementation, evaluation, and critique of communication programs designed to change behavior. Class works in on-line groups to create an actual mini-campaign and use the computer simulation SCOPE to develop a hypothetical campaign in the U.S. Students present their projects at a scheduled on-site session upon return to campus.

Student evaluation: Student evaluation based on exercises, final projects, and SCOPE projects.

Prerequisites: Introduction to Online Learning.

380.733 COMMUNICATION NETWORK ANALYSIS IN PUBLIC HEALTH

PROGRAMS. (4 units). First term. Boulay, Marc. Former course number 320.675.

Introduces the theory and method of network analysis, its application to public health, emphasizing the dissemination of public health information and the transmission of disease, and the influence of networks on health-related behavior.

Student evaluation: Student evaluation based on four problem sets and class participation.

380.734 GRADUATE SEMINAR IN HEALTH COMMUNICATION. (2 units). Fourth term.

Underwood, Carol. Former course number 320.676.

Discusses applications of communication methods to public health programs and literature in the field of community-wide programs.

Student evaluation: Student evaluation based on oral presentations.

Consent of instructor required.

380.735 CHILDREN, MEDIA, AND

HEALTH. (3 units). Second term. Borzekowski, Dina.

Participants examine childrens use of media and its impact on health. Using a developmental perspective, this course considers different aged children (from preschoolers to teenagers), multiple media formats (print, radio, television, computer games and the internet) and various health concerns (food preferences, consumerism, smoking, violence, weight, and sexuality).

Student evaluation: Three exercises and class participation.

380.743 DEVELOPMENT AND INTERVENTION IN AT-RISK INFANTS AND CHILDREN. (3 units). Fourth term.

DiPietro, Janet. Former course number 280.625.

Examines development of at-risk infants and children, and evaluates the influence of prenatal (e.g., substance exposure), perinatal (e.g., preterm birth), and postnatal (e.g., poverty) risk factors. Evaluates interventions which may modify cognitive and social outcomes. Seminar format with emphasis on student development of skills to critically evaluate research articles and understanding of the issues inherent to child development research.

Student evaluation: Student evaluation based on class preparation and contribution, and written and oral critiques of two journal articles.

Consent of instructor required.

380.751 APPLIED MATHEMATICAL

DEMOGRAPHY I. (3 units). Third term. Kim, Young. Former course number 320.614.

Focuses on contemporary issues in mathematical demography. Examines single and multiple decrement life tables; the theory and dynamics of stable populations (momentum of population growth and the speed of convergence to stability); and extensions to general dynamic models for populations with changing fertility and mortality rates, and their applications.

Prerequisites: 380.603, 380.652, 380.653.

Consent of instructor required.

380.752 APPLIED MATHEMATICAL

DEMOGRAPHY II. (3 units). Fourth term. Kim, Young. Former course number 320.615.

Focuses on contemporary issues in mathematical demography. Examines single and multiple decrement life tables; the theory and dynamics of stable populations (momentum of population growth and the speed of convergence to stability); and extensions to general dynamic models for populations with changing fertility and mortality rates, and their applications.

Prerequisites: 380.751; 380.603; 380.652-653.

Consent of instructor required.

380.753* DYNAMICS OF POPULATION

AGING. (3 units). Third term. Agree, Emily. Former course number 320.618. Not offered 2005-2006.

Examines basic concepts of demography of aging, including trends in aging and the health of populations; characteristics of the older population in the U.S. and other countries; models of the demographic and health transitions experienced by older individuals; and implications of population aging for policy and program responses.

Student evaluation: Student evaluation based on mid-term and final exams, and projects.

Consent of instructor required.

* Not offered every year as indicated.

380.760 CLINICAL ASPECTS OF REPRODUCTIVE HEALTH. (3 units). Fourth term. Nicholson, Wanda.

Provides a comprehensive presentation of several clinical disease processes affecting women's health. Topics include hysterectomy, hormone replacement therapy, pelvic inflammatory disease, infertility, breast disease and mammography, cervical cancer screening and management, and endometriosis. Uses traditional lecture materials, videos of procedures, patient interviews, and selected journal readings. Focuses not only on the clinical aspect of the disease, but the health policy implications on women's health. **Student evaluation:** Quiz 10%, class participation 20%, class presentation 30%, final paper 40%.

380.762 HIV INFECTION IN WOMEN, CHILDREN, AND ADOLESCENTS. (3 units). Fourth term. Gray, Ron. Former course number 280.623.

Presents the epidemiology of AIDS and HIV infection, risk factors, and social context for women, children, and adolescents, demonstrating how the epidemic in these three populations are linked socially, biologically, epidemically, and politically. Discusses policy, programmatic, and prevention issues, as well as theoretical bases of prevention programs. Emphasizes the social and behavioral factors that have shaped the current epidemic of HIV infection. Expert guest speakers present their work.

Student evaluation: Student evaluation based on class participation and a take-home final, final paper, or class presentation.

380.763 PROJECT DESIGN FOR REPRODUCTIVE HEALTH PROGRAMS IN DEVELOPING COUNTRIES. (4 units). Fourth term. Allison, Adrien.

Focuses on needs assessment and identifies measurable results. Draws on resources from multilateral institutions, WHO, UNFPA, the World Bank, USAID and nongovernmental organizations. Integrates sustainability, gender and participatory approaches into reproductive health, particularly maternal health-program development. Students participate in small teams to master problem based learning approaches. Class discussion provides opportunity for feedback and project adjustments.

Student evaluation: Student evaluation based on class participation (25%), an intermediate assignment (25%) and a final proposal (50%).

380.764 REPRODUCTIVE HEALTH RESEARCH IN DEVELOPING COUNTRIES: ISSUES AND METHODS. (4 units). Second term. Koenig, Michael.

Reviews documentation on reproductive health problems in developing countries and innovative social science research methodological approaches for investigation. Intended for second year doctoral students.

Student evaluation: Class contributions 40% and Research project 60%.

Prerequisites: Doctoral student or advance permission of instructor.

380.765 PREVENTING INFANT MORTALITY AND PROMOTING THE HEALTH OF WOMEN, INFANTS AND CHILDREN. (3 units). Fourth term. Offered via the Internet only.

Focuses on the historical problems and interventions associated with infant mortality. Describes the scientific basis for infant mortality and analyzes causes and consequences in a population and development of a programmatic and policy approach.

Student evaluation: Evaluation based on quizzes and two short papers.

Prerequisites: Introduction to Online Learning.

380.766 ADVANCED SEMINAR IN PERINATAL RESEARCH. (1 unit). Third term. Strobino, Donna. Former course number 280.617.

Discusses research articles reviewed in 380.662 in greater depth, covering sampling and selection bias, measurement of variables, data analysis strategies, and validity of inference. Each student leads discussion of one or two articles for each class.

Student evaluation: Student evaluation based on presentations.

Prerequisites: 380.662 is corequisite.

380.767 COUPLES AND REPRODUCTIVE HEALTH. (3 units). First term. Becker, Stan.

Reviews and discusses readings on couples and reproductive health such as: Definitions of couples and of reproductive health; sociological, anthropological and economic perspectives; fertility decision making; critiques of a couple approach from feminists and from those concerned primarily with less stable sexual partnerships for STD/AIDS prevention, and design of couple studies and service delivery interventions.

Student evaluation: Student evaluation based on a class presentation and a paper.

Prerequisites: 380.600 or consent of instructor.

Consent of instructor required.

RESEARCH STUDIES AND .800 COURSES

Opportunities are provided for directed reading, clinical experience, and special studies utilizing materials and facilities of the department, including a variety of cooperative arrangements with other departments, public health agencies, and overseas affiliations.

380.800 MPH CAPSTONE POPULATION AND FAMILY HEALTH SCIENCES. (variable units). First, second, third and fourth terms. Departmental faculty.

The MPH Capstone is an opportunity for students to work on public health practice projects that are of particular interest to them. The goal is for students to apply the skills and competencies they have acquired to a public health problem that simulates a professional practice experience.

Student evaluation: Paper and presentation.

Prerequisites: All other MPH core requirements must be taken before or concurrently with the capstone project.

Consent of instructor required.

380.810 FIELD PLACEMENT POPULATION AND FAMILY HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

380.812 APPLIED EXPERIENCE IN HEALTH COMMUNICATION. (3 units).

First, second, third and fourth terms. Borzekowski, Dina.

Students must complete a 2-consecutive-term applied experience producing or evaluating a health communication project. The purpose of this is to gain hands-on skills through participation in developing communication materials, collecting and analyzing health communication data, and/or writing up the results of a communication project. While we recommend that placement occur at the Johns Hopkins Center for Communication Programs or another Hopkins center, students may work with a Baltimore or Washington, DC, production company or media advocacy group.

Student evaluation: Student reports and supervisor evaluations.

380.820 THESIS RESEARCH POPULATION AND FAMILY HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

380.830 POSTDOCTORAL RESEARCH POPULATION AND FAMILY HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

380.840 SPECIAL STUDIES AND RESEARCH POPULATION AND FAMILY HEALTH SCIENCES. (variable units). First, second, third and fourth terms.

380.850 POPULATION STUDIES

RESEARCH SEMINAR. (1 unit). First, third and fourth terms. Departmental faculty; Becker, Stan.

Provides a forum for doctoral students and faculty in population studies to engage in critical review and discussion of both recent research and selected research classics in demography and population. The seminar uses a journal-club format in which one or more papers are distributed in advance. Participants are expected to read and discuss the assigned material. The seminar meets once every two weeks in the first, third, and fourth terms. Attendance is required of all first- and second-year PFHS doctoral students and encouraged for third-year students and above.

Student evaluation: Class participation.

380.860 RESEARCH SEMINAR IN POPULATION AND FAMILY HEALTH SCIENCES. (2 units). Second term. O'Campo, Patricia. Former course number 320.860.

Assists second year doctoral students in formulating ideas for their dissertations. Topics include literature reviews, formulating study questions, and conceptual frameworks.

Student evaluation: Student evaluation based on presentations and participation.

Consent of instructor required.

380.861 RESEARCH SEMINAR IN REPRODUCTIVE, PERINATAL, AND WOMENS HEALTH. (2 units). First term.

O'Campo, Patricia.

A seminar format is used to discuss seminal articles in reproductive, perinatal, and womens health. In depth discussions of questions related to one or more research articles in the field are used to develop critical analytic skills of students.

Student evaluation: Student presentations.

380.862 RESEARCH SEMINAR IN HEALTH COMMUNICATION. (1 unit). First, second, third and fourth terms. Borzekowski, Dina.

In this seminar, students critically review current and seminal articles concerning various aspects of health communication, including the impact of mass media, interpersonal communication, and health campaigns.

Student evaluation: Participation and seminar presentation.

380.863 RESEARCH SEMINAR IN CHILD HEALTH AND DEVELOPMENT. (1 unit).

First and third terms. Guyer, Bernard.

Provides experience in analytic evaluation of contemporary research regarding infant, child, and adolescent health, growth, and development across a range of academic disciplines and issues. Students and faculty critique and discuss empirical articles and examine their historical, methodological, and disciplinary perspectives. Highlights current controversies. Required for 2nd-year and above doctoral students in Child Health and Development track.

Student evaluation: Student evaluation based on preparation of assigned readings and participation in discussions.

**COURSES JOINTLY OFFERED
WITH OTHER DEPARTMENTS**

**140.640 STATISTICAL METHODS FOR
SAMPLE SURVEYS.** See Department of
Biostatistics.

**221.620 SUMMARY MEASURES OF
POPULATION HEALTH.** See Department of
International Health.

221.621 ELEMENTS OF ECONOMICS. See
Department of International Health.

**221.627 ISSUES IN MATERNAL
MORTALITY REDUCTION IN
DEVELOPING COUNTRIES.** See Department
of International Health.

**222.641 PRINCIPLES OF HUMAN
NUTRITION.** See Department of International
Health.

Extrdepartmental

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at <http://commprojects.jhsph.edu/courses/>

550.001 ENGLISH FOR ACADEMIC

PURPOSES. (0 units). First, second, third, fourth and summer terms. Hong Smith, Vicki.

Course focuses on academic writing skills including documentation styles, and combines Saturday class meetings with online assignments and one individual conference.

Consent of instructor required.

550.603 SCIENTIFIC WRITING I. (1 unit).

First term. Wilson, Renate.

Presents an overview of American-English scientific and technical writing conventions. Focus is on structure, organization, and on conceptual, methodological and substantive consistence. Also focuses on appropriate data presentation, referencing and citations, and public health usage. Intended for both native English speakers and speakers of English as a second language with limited writing experience. Lectures and interactive workshops.

Student evaluation: Student evaluation based on class participation and small writing samples.

550.604 SCIENTIFIC WRITING II. (1 unit).

Third term. Wilson, Renate.

Students present unpublished papers or similar writing in progress for critique led by a designated reviewer under the guidance of the instructor. Review criteria include conceptual clarity and consistency and a substantive approach, data presentation, and technical format in accordance with standards and accepted methodology in the writer's field. Group discussions address style, technical usage, and vocabulary.

Student evaluation: Student evaluation based on a paper draft or partial draft, and review responsibility for a student paper.

Consent of instructor required.

550.605 HISTORY OF PUBLIC HEALTH. (2 units). First term. Departmental faculty. Also offered via the Internet, third term.

Provides a broad outline of the historical context and development of public health. Accesses the various challenging hazards to health throughout history.

Prerequisites: Introduction to Online Learning.

550.608 PROBLEM SOLVING IN PUBLIC HEALTH. (4 units).

Summer term and winter institute. Lawrence, Robert. Also offered off-campus, first term.

Uses divergent public health problems to illustrate the problem-solving process, which includes defining the problem; measuring its magnitude; understanding the key biological, developmental, sociocultural, behavioral, and environmental determinants; identifying and developing intervention and prevention strategies; setting priorities and recommending policies; and understanding barriers to implementation and evaluation. Consists of lectures, discussions, and problem-solving exercises.

Student evaluation: Student evaluation is based on class participation, a final group presentation, and individual written assignments. Degree candidates should take this course as early in their program as possible.

550.630 PUBLIC HEALTH BIOLOGY. (3 units). First term. Glass, Gregory; Ketner, Gary; Krag, Sharon; Yager, James; Zirkin, Barry. Jointly offered with the Department of Biochemistry and Molecular Biology and the Department of Molecular Microbiology and Immunology.

Offers an integrative molecular and biological perspective on public health problems. Explores population biology and ecological principles underlying public health and reviews molecular biology in relation to public health biology. Modules focus on specific diseases of viral, bacterial, and environmental origin. Specific examples of each type are used to develop the general principles that govern interactions among susceptible organisms and etiologic agents. Special attention is devoted to factors that act in reproduction and development. Emphasis placed on common elements encountered in these modules. These may include origin and dissemination of drug resistance, organization and transmission of virulence determinants, modulation of immune responses, disruption of signal transduction pathways, and perturbation of gene expression. The role of the genetic constitution of the host is considered as well.

Student evaluation: Short papers in response to assigned readings.

Prerequisites: A modern, college-level course in biology.

550.691 QUANTITATIVE METHODS IN PUBLIC HEALTH I. (2 units). Summer term. Offered via the Internet only. Jointly offered with the Department of Biostatistics and the Department of Epidemiology.

Provides an introduction to the basic concepts of biostatistics and epidemiology as applied to public health problems. Emphasis is placed on descriptive statistics, probability concepts, and methodology used in the conduct of epidemiologic studies. Topics include appropriate summary measures of morbidity and mortality, direct and indirect methods of adjustment, abridged and clinical life tables, and measures of association. Various epidemiologic study designs used to investigate associations between risk factors and diseases outcomes are presented culminating with criteria for casual inferences. Examples of applications of epidemiologic and biostatistical methods in health services, genetics and public policy are provided.

Student evaluation: Student evaluation based on individual homework and group assignments and examinations.

Prerequisites: Introduction to Online Learning.
Consent of instructor required.

550.692 QUANTITATIVE METHODS IN PUBLIC HEALTH II. (3 units). First term. Offered via the Internet only. Jointly offered with the Department of Biostatistics and the Department of Epidemiology.

See description for 500.961

Prerequisites: Introduction to Online Learning; 550.691; requires successive registration for all three terms during the same academic year.

550.693 QUANTITATIVE METHODS IN PUBLIC HEALTH III. (2 units). Second term. Offered via the Internet only. Jointly offered with the Department of Biostatistics and the Department of Epidemiology.

See description for 500.961

Prerequisites: Introduction to Online Learning; 550.692; requires successive registration for all three terms during the same academic year.

550.840 SS/R: PUBLIC HEALTH. (2 units).

Third term. Lawrence, Robert; Robinson, Courtland.

Introduces students to methodological issues relevant to the emerging field of health and human rights. Reviews and critiques both quantitative and qualitative approaches to the study of health and human rights. Topics include: (1) development of human rights indicators for health and human rights research, (2) quantitative, qualitative and mixed approaches to the study of health and human rights, (3) assessment of human rights violations, (4) operationalization and assessment of health as a human right, (5) advocacy and communication strategies applied to the dissemination of research findings in health and human rights, and (6) methodological tools and resources in health and human rights research.

Student evaluation: Student evaluation based on class participation, critiques of written papers, and a final written assignment of approximately 1500 words.

Prerequisites: At least both of the first two terms of the Seminar in Health, Human Rights and Vulnerable Populations (301.865) and/or Human Rights for Public Health Practitioners (301.655) are required. In addition, successful completion of basic courses in biostatistics (140.611-140.612 or 140.621-140.622 or equivalents); epidemiology (340.601), and/or qualitative methods (224.690-224.691 or equivalents) are strongly recommended.

550.860 RESEARCH ETHICS. (1 unit). Second term. Krag, Sharon.

Presents information concerning issues related to the responsible conduct of research, such as authorship, data management, data ownership, guidelines of professional conduct, research fraud or scientific misconduct, academic ethics, conflict of interest, federal and institutional guidelines related to research using human and animal subjects, ethical issues involving vulnerable subjects in research, confidentiality, the Institutional Review Board (IRB) and the Institutional Animal Care and Use Committee (IACUC). Uses case studies to stimulate discussion.

Student evaluation: Student evaluation based on a take-home essay exam.

550.861* CURRENT TOPICS IN PUBLIC HEALTH. (2 units). Offered off-campus only, Summer term.

Senior faculty present topics of current public health interest, such as health problems of industrialized and developing nations, health promotion and disease prevention, health care delivery systems, environmental problems and other factors influencing the health status of populations and communities.

Student evaluation: Student evaluation is based on class participation and written assignments.

Prerequisites: Introduction to Online Learning.

550.862 CURRENT ISSUES IN PUBLIC HEALTH. (1 unit). First, second, third and fourth terms. Offered via the Internet only.

Senior faculty present topics of current public health interest, such as health problems of industrialized and developing nations, health promotion and disease prevention, health care delivery systems, environmental problems and other factors influencing the health status of populations and communities. This is the Internet version of 550.861.

Student evaluation: Student evaluation is based on class participation and written assignments.

Prerequisites: Introduction to Online Learning.

550.863 MPH INDIVIDUALIZED GOALS ANALYSIS. (0 units). First, second, third, fourth and summer terms. Brookmeyer, Ron.

Provides a structured process for M.P.H. students to plan their MPH educational program. In consultation with their advisors, students identify their educational and professional goals and develop a curriculum plan, including formal course work, special studies, extracurricular activities and an integrating experience project. The final product is a paper detailing the students goals and objectives, the curriculum plan, and an assessment of how this plan will meet the stated goals.

550.865 PUBLIC HEALTH PERSPECTIVES ON RESEARCH. (1 unit). First and second terms. Krag, Sharon.

Introduces the substantive and methodologic basis for public health research presenting human health throughout the life span; the major causes of morbidity and mortality; and strategies for health interventions in each stage of life. Also provides examples of common public health methodology drawn from the quantitative, qualitative, biologic, social, and behavioral sciences. Highlights principles of high-quality research, including the value of a population perspective, interdisciplinary cooperation, the importance of new measurement techniques, and the interface between theory and practice. Gives students information about the interactions between the public and the researcher.

Student evaluation: Student evaluation based on a take-home exam and participation in group projects.

Prerequisites: Required of Ph.D., Sc.D., Sc.M. and advanced study and research M.H.S. students.

550.873 DRPH SEMINAR: ADVANCED PUBLIC HEALTH PRACTICE. (1 unit). First, second, third and fourth terms. Guyer, Bernard.

Provides a framework for the development of advanced professional practice and leadership in public health. Topics include the scope of public health, leadership competencies, problem solving, and communication skills. Involves presentations by faculty, guest speakers, and students.

Student evaluation: Student evaluation based on critiques of three public health books and presentations of case studies.

RESEARCH STUDIES AND .800 COURSES

550.880 SS/R: GENERAL PREVENTIVE MEDICINE RESIDENCY-MPH. (1 unit).

First, second, third and fourth terms. Alexander, Miriam.

550.890 SS/R: GENERAL PREVENTIVE MEDICINE RESIDENCY-RESIDENCY YEAR. (variable units). First, second, third and fourth terms.

Prerequisites: Restricted to GPMR during post MPH year.

INTERDEPARTMENTAL MANAGEMENT SEQUENCE-DEPARTMENTS OF HEALTH POLICY AND MANAGEMENT AND INTERNATIONAL HEALTH

551.601 MANAGING HEALTH SERVICES

ORGANIZATIONS. (4 units). First term. Gundlach, Ann-Michele; Peters, David; Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of Health Policy and Management and the Department of International Health. Former course number 312.612.

Provides an introduction to managing and leading health services organizations based on the JHSPH Leadership and Management Paradigm. Within this paradigm, the stated purpose of the organization is achieved by applying leadership skills to influence people and institutions, and managing resources within a framework of principles, people, processes and organizational design. Major topics include: the healthcare environment and its organizational implications; creating a shared mission, vision and values; developing measurable goals and objectives; organizational design and structure; public participation in health service organizations; patient safety and ethical principles; communication; human resource management; continuous process improvement and measuring and monitoring organizational performance.

Student evaluation: Based on student exercises.

Prerequisites: Introduction to Online Learning.

551.602 EXERCISES IN MANAGING HEALTH SERVICES ORGANIZATIONS. (2 units). First term. Peters, David; Ward, William. Jointly offered with the Department of Health Policy and Management and the Department of International Health.

Explores a variety of settings in which to apply concepts learned in the course "Managing Health Services Organizations". Examines the following: (1) organizational design and how to evaluate an organization from the perspectives of open systems, (2) community-focused strategic management, (3) perspectives of key stakeholders-and ways organizations meet their expectations, (4) governance in healthcare organizations, (5) the role of conflict in healthcare organizations, (6) preparing, implementing, and communicating a budget that is based on limited resources within a business, (7) performance improvement concepts and tools in a healthcare organization, and (8) the construct of a "balanced score card" for a healthcare organization.

Student evaluation: Student evaluation based on group exercises and class participation.

551.603 FUNDAMENTALS OF BUDGETING AND FINANCIAL MANAGEMENT. (3 units). Second term. Ward, William. Also offered via the Internet, third term. Jointly offered with the Department of Health Policy and Management and the Department of International Health. Former course number 312.619.

Explains the role of budgeting as a key component of the administrative process. Students learn to develop a budget and evaluate the financial status of a department or operating unit and determine what, if any, corrective actions need to be taken. Presents various analytical methods in management decision making, including benefit/cost ratio analysis, variance analysis, and break-even analysis. Also includes approaches to benchmarking, productivity improvement techniques, and methods for building cost standards.

Student evaluation: Method of student evaluation based on midterm exam, final exam, and participation.

Prerequisites: Introduction to Online Learning.

551.604 QUANTITATIVE TOOLS FOR MANAGERS. (3 units). Second term. Reinke, William; Steinwachs, Donald. Jointly offered with the Department of Health Policy and Management and the Department of International Health. Former course number 312.641.

Provides current and future managers in health care with an operational understanding of quantitative models to support decisions on resource allocation. Learning objectives include: to develop an understanding of the process of quantitative modeling; to stimulate critical thinking about operational issues in a system; to introduce spreadsheet modeling and simulation as quantitative decision support tools; to identify classes of operations research problems and general approaches to support decisions, such as linear programming, forecasting, decision analysis, scheduling, and inventory control models; to develop a conceptual and computational understanding of these models; and to critically evaluate a published operations research application.

Student evaluation: Homework, case studies and project consisting of an application of an operations research technique covered in the course.

Prerequisites: Intermediate level of Excel competence.

551.605 CASE STUDIES IN MANAGEMENT DECISION-MAKING. (3 units). Third term.

Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of Health Policy and Management and the Department of International Health. Former course number 221.603.

Students analyze problems and develop strategies based on real dilemmas faced by decision-makers. Students formulate positions before class and actively participate in discussion during class. Cases come from both International and U.S. settings, and deal with issues such as: conflict between budget and program offices, working with governing boards, contracting between government and non-government providers, dysfunctional clinics, reforming hospitals, managing local politics, cutting budgets and collaborating in informal organizations. Develops skills in leadership, negotiation, analysis, and communication.

Student evaluation: Participating in class and written assignments.

Prerequisites: 551.601, 551.602, 551.603, and 551.604.

551.606 STUDIES IN HEALTHCARE LEADERSHIP AND MANAGEMENT. (3

units). Fourth term. Elmendorf, A. Edward; Peters, David. Jointly offered with the Department of Health Policy and Management and the Department of International Health. Former course number 221.604.

This is a follow-up course to 551.605 Case Studies in Management Decision-making. Students analyze problems and develop strategies for the policy, financing, and organization of health care organizations and health systems. Students formulate positions before class and actively participate in discussion during class. Cases come from international and U.S. settings, and include decisions for coverage of vulnerable populations, public-private partnerships, policy advocacy over international development assistance, and regulation of private markets. Develops skills in leadership, negotiation, analysis, and communication. Students using the course as a capstone experience develop and present a case study, or prepare a comprehensive analysis of an organization or healthcare issue presented in one of the cases in 551.603 or 551.604.

Student evaluation: Participation in class, written analysis of a case, and preparation and presentation of a case study.

Prerequisites: 551.605.

Clinical Investigation

Course data as of April 19, 2004. For current course data, click here to visit the School course search engine at <http://commprojects.jhsph.edu/courses/>

390.611 ANALYTICAL METHODS IN CLINICAL INVESTIGATION. (4 units). First term. Flexner, Charles. Jointly offered with the School of Medicine.

Reviews the most important analytical techniques commonly applied to clinical research, their scientific basis, and the capabilities and limitations of current analytical methodology. Topics include metabolic studies; isotopic methods; imaging; immunoassays; techniques for genetic analysis (RFLP, pedigree analysis, etc.); application of tools of molecular biology, including DNA and RNA analysis; physiologic studies; receptor studies; kinetic analysis (including introduction to pharmacokinetics); laboratory quality control and normative values.

Student evaluation: Student evaluation based on five or six homework assignments, each of which consists of a two-page memo and a paper.

Consent of instructor required.

390.612* DESIGN AND ANALYSIS OF CLINICAL TRIALS. (3 units). First term. Piantadosi, Steve. Jointly offered with the Department of Biostatistics. Former course number 340.634. Not offered 2005-2006.

Emphasizes quantitative design of randomized comparative studies and considers ethics, early developmental (non-randomized) trial designs, and monitoring/interim analyses. Topics include principles of terminology and study design, theoretical and practical aspects of randomization, quantitative design parameters (e.g., sample size and power), monitoring and interim analysis, analysis and reporting, and special designs, such as factorial and cross-over trials.

Student evaluation: Student evaluation based on class participation and five or six homework assignments, each of which consists of a two-page memo discussing some problem or aspect of clinical trials.

Prerequisites: 340.613. 140.641 recommended.

Consent of instructor required.

390.631 PRINCIPLES OF DRUG DEVELOPMENT. (3 units). Second term. Hendrix, Craig. Jointly offered with the School of Medicine.

Presents principles underlying preclinical and clinical development of new therapeutic drugs and procedures. Describes and evaluates specific examples, and discusses legal and ethical regulations that apply to drug development.

Student evaluation: Student evaluation based on an exam.

Consent of instructor required.

* Not offered every year as indicated.

390.651 TOPICS IN CLINICAL

INVESTIGATION. (4 units). Second term.

Flexner, Charles. Jointly offered with the School of Medicine.

Instruction, readings and problem sets (including lab analysis) illustrate appropriate application of various research designs and strategies to clinical research problems. Topics include observational studies cohort designs, cross-sectional studies, case-control studies; early clinical trials (phase I/II), pilot studies, adverse effects, pharmacokinetic data, and dose-ranging studies; definitive clinical trials-randomized clinical trials, stratification, stopping rules, parallel vs. cross-over designs, principles of analysis, and multi-center trials; psychosocial aspects of clinical research, survey instrument in clinical research; meta-analysis of clinical trials; clinical decision analysis/cost-utility analysis; and evaluation of diagnostic tests, devices, and surgical procedures.

Student evaluation: Student evaluation is based on an exam and class participation.

Consent of instructor required.

390.701 THESIS PREPARATION (GRANT WRITING) I. (2 units). Third term. Adkinson, Franklin. Jointly offered with the School of Medicine.

Students consider the principles of research strategy and requirements of funding agencies, choosing a research area of interest together with a suitable mentor. With mutual review and criticism, each student develops a research plan in the format of an NIH RO1 application, which forms the basis for clinical research activity in the subsequent two years.

Student evaluation: Student evaluation is based on written material and a research plan.

390.702 THESIS PREPARATION (GRANT WRITING) II. (4 units). Fourth term. Adkinson, Franklin. Jointly offered with the School of Medicine.

Students consider the principles of research strategy and requirements of funding agencies, choosing a research area of interest together with a suitable mentor. With mutual review and criticism, each student develops a research plan in the format of an NIH RO1 application, which forms the basis for clinical research activity in the subsequent two years.

Student evaluation: Student evaluation is based on written material and a research plan.

Prerequisites: 390.701.

390.703 PRESENTATION SKILLS. (1 unit). Fourth term. Sanders, Wendy. Jointly offered with the School of Medicine.

Prepares students to organize and deliver an effective scientific presentation. Focuses on designing a scientific talk, including preparing effective visual aids. Complements 390.701-702, at the end of which students are required to present their work.

Student evaluation: Student evaluation based on the presentation.

390.710 BIOMEDICAL WRITING I. (2 units). First term. McClellan, Deborah. Jointly offered with the School of Medicine.

Introduces the process of writing peer-reviewed research paper and provides a brief overview of grant proposal writing. Emphasizes a logical organization, clear writing, and an understanding of readers and reviewers expectations. Students prepare selected sections of a first draft of a research paper based on their own research, and they receive feedback on their drafts through in-class discussion and written comments from the instructor.

Student evaluation: Evaluation based on homework assignments and class participation.

Consent of instructor required.

390.711 BIOMEDICAL WRITING II. (2 units). Second term. McClellan, Deborah. Jointly offered with the School of Medicine.

Introduces the process of writing peer-reviewed research paper and provides a brief overview of grant proposal writing. Emphasizes a logical organization, clear writing, and an understanding of readers' and reviewers' expectations. Students prepare selected sections of a first draft of a research paper based on their own research, and they receive feedback on their drafts through in-class discussion and written comments from the instructor.

Student evaluation: Evaluation based on homework assignments and class participation.

Prerequisites: 390.710.

Consent of instructor required.

390.712 WRITING THE BIOMEDICAL RESEARCH PAPER I. (2 units). First term. McClellan, Deborah.

Introduces the entire process of writing a peer-reviewed manuscript for publication, from organizing the raw data to correcting proofs. Emphasizes logical organization, clear writing, and an understanding of readers and reviewers expectations.

Student evaluation: Students prepare and revise a first draft of a manuscript based on their own research, and they receive feedback on their drafts through in-class discussion and written comments from the instructor and their fellow classmates.

Prerequisites: Restricted to GTPCI students.

Consent of instructor required.

390.713 WRITING THE BIOMEDICAL RESEARCH PAPER II. (2 units). Second term. McClellan, Deborah.

Introduces the entire process of writing a peer-reviewed manuscript for publication, from organizing the raw data to correcting proofs. Emphasizes logical organization, clear writing, and an understanding of readers and reviewers expectations.

Student evaluation: Students prepare and revise a first draft of a manuscript based on their own research, and they receive feedback on their drafts through in-class discussion and written comments from the instructor and their fellow classmates.

Prerequisites: 390.712.

Consent of instructor required.

390.751 SEMINARS IN CLINICAL INVESTIGATION. (2 units). Third term. Flexner, Charles. Jointly offered with the School of Medicine.

Presents issues in clinical research, exemplified by readings from classical papers and contemporary literature.

Student evaluation: Student evaluation is based on a presentation.

390.752 SEMINARS IN CLINICAL INVESTIGATION. (2 units). Fourth term. Flexner, Charles. Jointly offered with the School of Medicine.

Presents issues in clinical research, exemplified by readings from classical papers and contemporary literature.

Student evaluation: Student evaluation is based on a presentation.

390.801 PROFESSIONAL GOALS AND OBJECTIVES. (1 unit). Second term. Flexner, Charles. Jointly offered with the School of Medicine.

Consists of didactic sessions focused on careers and mentoring, and meetings between students and their academic advisors and/or potential research mentors to identify a single area of research focus and discuss short- and long-term career goals.

Student evaluation: Student evaluation based on an outline of proposed research plans.

Consent of instructor required.

390.820 THESIS RESEARCH IN CLINICAL INVESTIGATION. (variable units). First, second, third and fourth terms. Jointly offered with the School of Medicine.

390.840 SPECIAL STUDIES AND RESEARCH IN CLINICAL INVESTIGATION. (variable units). First, second, third and fourth terms. Jointly offered with the School of Medicine.

390.855 RESEARCH FORUM. (1 unit). Fourth term. Adkinson, Franklin; Piantadosi, Steve.

A monthly research forum, lasting one hour, in which advanced fellows will present interim research findings and plans for discussion with colleagues and faculty.

Student evaluation: Attendance and presentation participation.

SCIENCE OF CLINICAL INVESTIGATION SERIES

The following courses, 390.671-675, are offered as part of the SOCI evening series. Completion of the four course series leads to a special certificate and/or CME credits. A separate application process is required. These courses are not intended for graduate students outside of the GTPCI program.

390.671 DESIGN OF CLINICAL STUDIES. (3 units). First term. Samet, Jonathan. Jointly offered with the Department of Biostatistics and the Department of Epidemiology. Former course number 390.614.

Presents scientific method as applied in a clinical setting; framing a scientific question in quantitative terms; choosing a clinical study design; collecting and managing data; formulating statistical inferences about research questions; writing a study protocol; and critical evaluation of study design.

Student evaluation: Student evaluation based on a project and an exam.

Consent of instructor required.

390.672 QUANTITATIVE ANALYSIS OF CLINICAL DATA. (3 units). Second term. Zeger, Scott. Jointly offered with the Department of Biostatistics and the Department of Epidemiology. Former course number 390.615.

Presents the statistical approach to scientific inference; creation of graphical and tabular displays of research information; and design and analysis of data from laboratory, clinical, observational, and experimental clinical studies.

Student evaluation: Student evaluation based on homeworks and a project.

Consent of instructor required.

390.673 ETHICAL AND REGULATORY ISSUES IN CLINICAL RESEARCH. (3 units). Fourth term. Adkinson, Franklin. Former course number 390.616.

Explores and examines the ethical issues central to clinical research, reviews current regulations for clinical investigation, promotes understanding of the function and procedures of Institutional Review Boards, and better appreciation of the role of good clinical practices for clinical trials.

Student evaluation: Student evaluation based on a project and an exam.

Consent of instructor required.

390.675 OUTCOMES AND EFFECTIVENESS

RESEARCH. (3 units). Third term. Powe, Neil; Pronovost, Peter.

Explores the applications of methods for assessing patient outcomes of care in inpatient and managed care settings, and the methods used to assess the contributions of treatment, patient characteristics, access arrangements, and other factors associated with disease outcomes. The range of outcomes to be examined includes clinical/disease, functional status, quality of life, satisfaction, and cost. Explores conceptual modeling of treatment/outcomes relationships including decision analysis, the range of data sources, data collection strategies, statistical modeling, and application of the information including the use of systematic reviews.

Student evaluation: Class participation in discussions, a discussion on an article, and a final project where students develop an outcomes or effectiveness proposal.

Prerequisites: GTPCI student or consent of instructor.

Consent of instructor required.

School of Nursing

Courses

The following School of Nursing courses are required for the M.S.N./M.P.H. program and are jointly offered by the School of Public Health. Students in the School of Public Health may enroll in these courses as interdivisional registrants. These courses must appear on the two terms' registration forms that correspond to the semester in which they are offered (i.e., first and second term for fall semester, third and fourth for spring).

NR 500.601 Public Health Nursing Theory and Practice. (3 semester units/SHPH students earn 3+2 units) Fall. Dr. Kub.

Analysis of theories relevant to nursing and public health helps identify the unique role and function of public health nursing across settings. Students explore the role and function of nursing practice in primary and secondary prevention in the community, state, and nation. Special emphasis is placed on assessing the community as client and developing models of community-based promotive and preventive care.

NR 500.602 Public Health Nursing Theory and Practice Practicum. (3 semester units/SHPH students earn 3+2 units) Summer. Dr. Kub.

Involves a community assessment, clinical practice with a vulnerable population or high risk aggregate, and writing a proposal to address or prevent a risk factor of health problems in that population. Students identify a community agency/ongoing program to practice public health nursing, explore funding possibilities, meet with community residents, and conduct a community assessment. Weekly practicum conferences and grant writing sessions complement field experiences.

Prerequisite: NR 500.601

NR 500.605 Public Health Nursing Leadership and Management. (3 semester units/SHPH students earn 3+2 units) Spring. Dr. White.

This didactic course is focused on the analysis, integration, and application of principles of leadership and management to health care organizations and to population-based efforts across the health care delivery system. Special emphasis is placed on

the practical skills needed for nurses to succeed as leaders and managers in today's local, state, national, and international health care environment.

Prerequisites: NR 500.601

NR 500.606 Public Health Nursing Leadership and Management Practicum.

(3 semester units/SHPH students earn 3+2 units) Fall. Dr. Groves.

Field placements in settings where community/public health nursing services are managed and/or health policy is analyzed, developed, or implemented develop expertise in the appropriate match of evaluation techniques with programs and in the use of strategic assessment, management, and leadership techniques. Emphasizes public-private partnerships as integral components of health care reform, and the need for today's community/public health nurse to flexibly and creatively integrate public and private sector strategies. Weekly practicum conference/seminars and an evaluation workshop complement field experience.

Prerequisite: NR 500.601-602, NR 500.605, NR 100.560 or consent of instructor.

List of Courses

Course Number	Course Title
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DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

120.600	BIOCHEMISTRY -- AN INTRODUCTORY COURSE I
120.601	BIOCHEMISTRY -- AN INTRODUCTORY COURSE II
120.602	INTRODUCTION TO MOLECULAR BIOLOGY
120.603	MOLECULAR BIOLOGY OF DISEASE
120.608	GENOMICS FOR PUBLIC HEALTH
120.613*	NUCLEIC ACID CHEMISTRY I
120.614*	NUCLEIC ACID CHEMISTRY II
120.615	MOLECULAR BIOLOGY OF CARCINOGENESIS
120.620	FUNDAMENTALS OF REPRODUCTIVE BIOLOGY
120.621	MOLECULAR ENDOCRINOLOGY
120.622	MOLECULAR AND CELLULAR MECHANISMS OF REPRODUCTION
120.623	MULTIDISCIPLINARY RESEARCH IN THE REPRODUCTIVE SCIENCES
120.624	MECHANISMS FOR PRESERVATION OF GENOME INTEGRITY
120.625	REPRODUCTIVE BIOLOGY FOR BIOMEDICAL SCIENTISTS
120.800	MPH CAPSTONE: BIOCHEMISTRY AND MOLECULAR BIOLOGY
120.820	THESIS RESEARCH BIOCHEMISTRY
120.830	POSTDOCTORAL RESEARCH BIOCHEMISTRY
120.840	SPECIAL STUDIES AND RESEARCH BIOCHEMISTRY
120.850	BIOCHEMICAL TECHNIQUES
120.852	CURRENT RESEARCH LITERATURE
120.853	SUMMER BIOCHEMICAL TECHNIQUES
120.861	SPECIAL TOPICS IN BIOCHEMISTRY: NUCLEAR HORMONE RECEPTOR STRUCTURE, FUNCTION AND ACTIVITY
120.862	SPECIAL TOPICS IN BIOCHEMISTRY: FUNCTIONS OF SMALL RNAs IN DEVELOPMENT AND DEFENSE
120.863	SPECIAL TOPICS IN BIOCHEMISTRY: NUCLEOTIDE EXCISION REPAIR
120.870	MHS THESIS IN REPRODUCTIVE BIOLOGY

* Not offered every year as indicated.

Course Number	Course Title
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DEPARTMENT OF BIOSTATISTICS

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

140.611	STATISTICAL REASONING IN PUBLIC HEALTH I
140.612	STATISTICAL REASONING IN PUBLIC HEALTH II
140.615	STATISTICS FOR LABORATORY SCIENTISTS I
140.616	STATISTICS FOR LABORATORY SCIENTISTS II
140.621	STATISTICAL METHODS IN PUBLIC HEALTH I
140.622	STATISTICAL METHODS IN PUBLIC HEALTH II
140.623	STATISTICAL METHODS IN PUBLIC HEALTH III
140.624	STATISTICAL METHODS IN PUBLIC HEALTH IV
140.632	INTRODUCTION TO THE SAS STATISTICAL PACKAGE
140.636	BIOCOMPUTING I:PERL FOR BIOINFORMATICS
140.637	BIOLOGICAL DATABASES AND DISTRIBUTED COMPUTING
140.638	ANALYSIS OF BIOLOGICAL SEQUENCES
140.640	STATISTICAL METHODS FOR SAMPLE SURVEYS
140.641	SURVIVAL ANALYSIS
140.642*	DESIGN OF CLINICAL EXPERIMENTS
140.644	STATISTICAL LEARNING: ALGORITHMIC AND NONPARAMETRIC APPROACHES
140.651	METHODS IN BIOSTATISTICS I
140.652	METHODS IN BIOSTATISTICS II
140.653	METHODS IN BIOSTATISTICS III
140.654	METHODS IN BIOSTATISTICS IV
140.655	ANALYSIS OF LONGITUDINAL DATA
140.656	MULTILEVEL STATISTICAL MODELS IN PUBLIC HEALTH
140.658	STATISTICS FOR PSYCHOSOCIAL RESEARCH: STRUCTURAL MODELS
140.662	SPATIAL ANALYSIS AND GIS I
140.663	SPATIAL ANALYSIS AND GIS II
140.665	CAUSAL INFERENCE
140.668	SPECIAL TOPICS IN GENETICS AND GENOMICS
140.671	INTRODUCTION TO PROBABILITY I
140.672	INTRODUCTION TO PROBABILITY II
140.673	INTRODUCTION TO STATISTICAL THEORY I
140.674	INTRODUCTION TO STATISTICAL THEORY II
140.688	STATISTICS FOR GENE EXPRESSION
140.693	ADVANCED PROBABILITY I
140.694	ADVANCED PROBABILITY II
140.751	ADVANCED GENERALIZED LINEAR MODELS I
140.752	ADVANCED GENERALIZED LINEAR MODELS II
140.753	ADVANCED GENERALIZED LINEAR MODELS III

* Not offered every year as indicated.

Course Number	Course Title
140.754	ADVANCED GENERALIZED LINEAR MODELS IV
140.763*	BAYESIAN METHODS
140.771	ADVANCED STATISTICAL THEORY I
140.772	ADVANCED STATISTICAL THEORY II
140.773	FOUNDATIONS OF STATISTICS I
140.774	FOUNDATIONS OF STATISTICS II
140.776	STATISTICAL COMPUTING
140.778	ADVANCED STATISTICAL COMPUTING
140.794*	ADVANCED SURVIVAL ANALYSIS
140.800	MPH CAPSTONE BIOSTATISTICS
140.820	THESIS RESEARCH BIOSTATISTICS
140.830	POSTDOCTORAL RESEARCH BIOSTATISTICS
140.840	SPECIAL STUDIES AND RESEARCH BIOSTATISTICS

* Not offered every year as indicated.

Course Number	Course Title
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DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

180.601	ENVIRONMENTAL HEALTH
180.603	MOLECULAR TECHNIQUES FOR ENVIRONMENTAL HEALTH SCIENCES
180.611	THE GLOBAL ENVIRONMENT AND PUBLIC HEALTH
180.629	ENVIRONMENTAL AND OCCUPATIONAL HEALTH LAW AND POLICY
180.631	ENVIRONMENTAL AND OCCUPATIONAL HEALTH POLICY SEMINAR
180.640	MOLECULAR EPIDEMIOLOGY AND BIOMARKERS IN PUBLIC HEALTH
180.650*	FUNDAMENTALS OF CLINICAL ONCOLOGY FOR PUBLIC HEALTH PRACTITIONERS
180.660	INTRODUCTORY PRINCIPLES OF ENVIRONMENTAL HEALTH
180.800	MPH CAPSTONE ENVIRONMENTAL HEALTH SCIENCES
180.820	THESIS RESEARCH ENVIRONMENTAL HEALTH SCIENCES
180.830	POSTDOCTORAL RESEARCH ENVIRONMENTAL HEALTH SCIENCES
180.840	SPECIAL STUDIES AND RESEARCH ENVIRONMENTAL HEALTH SCIENCE
180.860	SPECIAL STUDIES MHS ESSAY
180.880	SPECIAL STUDIES IN ENVIRONMENTAL HEALTH/COMMUNITY OUTREACH

Division of Environmental Health Engineering

182.614	INDUSTRIAL HYGIENE LABORATORY
182.615	AIRBORNE PARTICLES
182.621	INTRODUCTION TO ERGONOMICS
182.622	VENTILATION CONTROLS
182.623	OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT
182.625	PRINCIPLES OF INDUSTRIAL HYGIENE
182.626	TROPICAL ENVIRONMENTAL HEALTH
182.631	PRINCIPLES OF OCCUPATIONAL SAFETY
182.637	NOISE AND OTHER PHYSICAL AGENTS IN THE ENVIRONMENT
182.638*	FUNDAMENTALS OF WATER QUALITY ENGINEERING FOR PUBLIC HEALTH
182.640*	FOOD- AND WATER- BORNE DISEASES
182.810	FIELD PLACEMENT ENVIRONMENTAL HEALTH ENGINEERING
182.820	THESIS RESEARCH ENVIRONMENTAL HEALTH ENGINEERING
182.830	POSTDOCTORAL RESEARCH ENVIRONMENTAL HEALTH ENGINEERING
182.840	SPECIAL STUDIES/RESEARCH ENVIRONMENTAL HEALTH ENGINEERING
182.845	SS/R: ADVANCED TOPICS IN AEROSOLS AND AIR POLLUTION
182.847	SS/R IN FOOD TOXICOLOGY

Division of Physiology

183.631	FUNDAMENTALS OF HUMAN PHYSIOLOGY
183.635	MATHEMATICAL APPROACHES TO PHYSIOLOGICAL PROBLEMS
183.638	MECHANISMS OF CARDIOPULMONARY CONTROL
183.641*	THE HEALTH EFFECTS OF INDOOR AND OUTDOOR AIR POLLUTION

* Not offered every year as indicated.

Course Number	Course Title
183.642	THE RESPIRATORY SYSTEM UNDER STRESS
183.643	ESSENTIALS OF PULMONARY FUNCTION MEASUREMENTS
183.820	THESIS RESEARCH PHYSIOLOGY
183.830	POSTDOCTORAL RESEARCH PHYSIOLOGY
183.840	SPECIAL STUDIES AND RESEARCH PHYSIOLOGY
183.861	CURRENT RESEARCH IN PHYSIOLOGY
Division of Radiation Health Sciences	
186.601	INTRODUCTION TO RADIATION HEALTH SCIENCES
186.610	NUCLEAR INSTRUMENTATION
186.620*	RADIOCHEMISTRY
186.630	RADIOPHARMACOLOGY
186.645	RADIATION SAFETY AND DOSIMETRY
186.660	RADIOBIOLOGY
186.670	CRITICAL PUBLIC HEALTH ISSUES CONCERNING IONIZING RADIATION
186.810	FIELD PLACEMENT RADIATION HEALTH SCIENCES
186.820	THESIS RESEARCH RADIATION HEALTH SCIENCES
186.830	POSTDOCTORAL RESEARCH RADIATION HEALTH SCIENCES
186.840	SPECIAL STUDIES AND RESEARCH RADIATION HEALTH SCIENCES
Division of Toxicological Sciences	
187.610	PRINCIPLES OF TOXICOLOGY
187.620*	TOXICOLOGICAL PATHOLOGY
187.630	ROLE OF METABOLISM OF XENOBIOTICS IN TOXICOLOGY
187.632	MOLECULAR TOXICOLOGY
187.634	MOLECULAR DOSIMETRY AND BIOMARKERS
187.641*	ENVIRONMENTAL IMMUNOLOGY
187.661*	FUNDAMENTALS OF NEUROTOXICOLOGY
187.820	THESIS RESEARCH TOXICOLOGICAL SCIENCES
187.830	POSTDOCTORAL RESEARCH TOXICOLOGICAL SCIENCES
187.840	SPECIAL STUDIES AND RESEARCH TOXICOLOGICAL SCIENCES
187.861	TOXICOLOGICAL SCIENCES SEMINAR
Division of Occupational and Environmental Health	
188.680	FUNDAMENTALS OF OCCUPATIONAL HEALTH
188.681	OCCUPATIONAL HEALTH
188.684	OCCUPATIONAL AND ENVIRONMENTAL MEDICINE
188.685	OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSING
188.694	ADVANCED TOPICS IN OCCUPATIONAL HEALTH NURSING
188.810	FIELD PLACEMENT OCCUPATIONAL AND ENVIRONMENTAL HEALTH
188.820	THESIS RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH
188.830	POSTDOCTORAL RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH
188.840	SPECIAL STUDIES AND RESEARCH OCCUPATIONAL AND ENVIRONMENTAL HEALTH

* Not offered every year as indicated.

Course Number	Course Title
188.860	TUTORIAL IN TISSUE INJURY, INFLAMMATION, AND REPAIR

Course Number	Course Title
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DEPARTMENT OF EPIDEMIOLOGY

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

340.601	PRINCIPLES OF EPIDEMIOLOGY
340.602	INTERMEDIATE EPIDEMIOLOGY
340.603	COHORT STUDIES: DESIGN, ANALYSIS AND APPLICATIONS
340.604	DESIGN AND APPLICATIONS OF CASE-CONTROL STUDIES
340.606	META-ANALYSIS
340.607	EPIDEMIOLOGIC AND PREVENTIVE ASPECTS OF CARDIOVASCULAR DISEASES
340.608	OBSERVATIONAL EPIDEMIOLOGY
340.611	METHODOLOGIC ISSUES IN CANCER EPIDEMIOLOGY
340.612	EPIDEMIOLOGIC BASIS FOR TUBERCULOSIS CONTROL
340.613	DESIGN AND CONDUCT OF CLINICAL TRIALS
340.615	TOBACCO CONTROL: NATIONAL AND INTERNATIONAL APPROACHES
340.616	EPIDEMIOLOGY OF AGING
340.618*	OCCUPATIONAL EPIDEMIOLOGY
340.620	PRINCIPLES OF CLINICAL EPIDEMIOLOGY
340.621	PRINCIPLES OF EPIDEMIOLOGY I
340.622	PRINCIPLES OF EPIDEMIOLOGY II
340.623*	EPIDEMIOLOGIC AND POLICY ASPECTS OF SELECTED CHILDHOOD DISEASES
340.624	ETIOLOGY, PREVENTION, AND CONTROL OF CANCER I
340.625	ETIOLOGY, PREVENTION, AND CONTROL OF CANCER II
340.627	EPIDEMIOLOGY OF INFECTIOUS DISEASES
340.629	MEDICAL MYCOLOGY
340.630	FUNDAMENTALS OF GENETIC EPIDEMIOLOGY
340.631	METHODS IN GENETIC EPIDEMIOLOGY I
340.632	METHODS IN GENETIC EPIDEMIOLOGY II
340.637*	ENVIRONMENTAL EPIDEMIOLOGY
340.640	EYE DISEASE: EPIDEMIOLOGY AND CONTROL
340.641	NOSOCOMIAL INFECTION
340.642*	HISTORY OF EPIDEMIOLOGY I: INFECTIOUS DISEASES
340.643*	HISTORY OF EPIDEMIOLOGY II: EPIDEMIOLOGY AND PUBLIC HEALTH
340.646	EPIDEMIOLOGY AND PUBLIC HEALTH IMPACT OF HIV AND AIDS
340.651	EMERGING INFECTIONS
340.652	FIELD IMPLEMENTATION OF EPIDEMIOLOGIC STUDY
340.653	EPIDEMIOLOGIC INFERENCE IN OUTBREAK INVESTIGATIONS
340.654	EPIDEMIOLOGY AND NATURAL HISTORY OF HUMAN VIRAL INFECTIONS
340.655	METHODS IN CLINICAL RESEARCH
340.664	INTRODUCTION TO GENETIC EPIDEMIOLOGY
340.669*	STATISTICAL APPROACHES TO GENETICS OF CANCER

* Not offered every year as indicated.

Course Number	Course Title
340.675	DATA MINING AND ITS APPLICATIONS IN EPIDEMIOLOGY
340.705	ADVANCED SEMINAR IN SOCIAL EPIDEMIOLOGY
340.710	INFERENTIAL PROBLEMS IN EPIDEMIOLOGIC STUDIES AND CLINICAL TRIALS
340.715	PROBLEMS IN THE DESIGN OF EPIDEMIOLOGIC STUDIES
340.716	ECOSYSTEM CHANGE AND PUBLIC HEALTH
340.717	HEALTH SURVEY RESEARCH METHODS
340.718	EPIDEMIOLOGIC METHODS IN HEALTH SERVICES
340.728	ADVANCED METHODS FOR DESIGN AND ANALYSIS OF COHORT STUDIES
340.730	ASSESSMENT OF CLINICAL CARDIOVASCULAR DISEASE
340.800	MPH CAPSTONE EPIDEMIOLOGY
340.803	ADVANCED TOPICS IN CARDIOVASCULAR DISEASE EPIDEMIOLOGY
340.810	FIELD PLACEMENT EPIDEMIOLOGY
340.820	THESIS RESEARCH EPIDEMIOLOGY
340.830	POSTDOCTORAL RESEARCH EPIDEMIOLOGY
340.840	SPECIAL STUDIES AND RESEARCH EPIDEMIOLOGY
340.845	SS/R APPLIED ASPECTS OF COHORT STUDIES
340.851	PHASE INTERNSHIP
340.863	DOCTORAL SEMINARS IN EPIDEMIOLOGY
340.869*	RESEARCH METHODS IN SEXUALLY TRANSMITTED DISEASES

* Not offered every year as indicated.

Course Number	Course Title
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DEPARTMENT OF HEALTH POLICY AND MANAGEMENT

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

300.600	INTRODUCTION TO HEALTH POLICY
300.601	INTRODUCTION TO HEALTH POLICY I
300.602	INTRODUCTION TO HEALTH POLICY II
300.651	INTRODUCTION TO THE U.S. HEALTHCARE SYSTEM
300.652	POLITICS OF HEALTH POLICY
300.700	TEACHING ASSISTANT ORIENTATION SEMINAR
300.701	DOCTORAL SEMINAR IN HEALTH AND PUBLIC POLICY
300.702	DOCTORAL SEMINAR IN SOCIAL AND BEHAVIORAL SCIENCES
300.703	DOCTORAL SEMINAR IN HEALTH SERVICES RESEARCH
300.704	HPM DOCTORAL CAPSTONE COURSE
300.750*	TEACHING AT THE UNIVERSITY LEVEL
300.751*	TEACHING AT THE UNIVERSITY LEVEL PRACTICUM
300.800	MPH CAPSTONE HEALTH POLICY AND MANAGEMENT
300.840	SPECIAL STUDIES AND RESEARCH IN HPM FOR MPH CANDIDATES
300.861	GRADUATE SEMINAR IN HEALTH POLICY AND MANAGEMENT
300.870	THE RESEARCH AND PROPOSAL WRITING PROCESS I
300.871	THE RESEARCH AND PROPOSAL WRITING PROCESS II
301.607	HEALTH POLICY ANALYSIS AND SYNTHESIS
301.612*	HEALTH, POVERTY AND PUBLIC POLICY IN THE U.S.
301.615	SEMINAR IN HEALTH DISPARITIES
301.617*	SOCIOLOGICAL PERSPECTIVES ON HEALTH
301.620	HEALTH, WORK AND LABOR MOVEMENT
301.627	UNDERSTANDING AND PREVENTING VIOLENCE
301.645	ISSUES IN HEALTH ADVOCACY
301.647	TERRORISM AND PUBLIC HEALTH
301.655	HUMAN RIGHTS FOR PUBLIC HEALTH PRACTITIONERS
301.657	ALCOHOL AND HEALTH
301.775	HEALTH INFORMATION PRIVACY AND POLICY
301.820	THESIS RESEARCH HEALTH AND PUBLIC POLICY
301.830	POSTDOCTORAL RESEARCH HEALTH AND PUBLIC POLICY
301.840	SPECIAL STUDIES & RESEARCH HEALTH AND PUBLIC POLICY
301.861	GRADUATE SEMINAR IN HEALTH AND PUBLIC POLICY
301.865	SEMINAR IN HEALTH AND HUMAN RIGHTS
302.650	WORK ORGANIZATION, SOCIETY AND HEALTH
302.683	PRINCIPLES OF HEALTH BEHAVIOR CHANGE
302.685	PSYCHOSOCIAL FACTORS IN HEALTH AND ILLNESS
302.688	RESEARCH DESIGN IN THE SOCIAL AND BEHAVIORAL SCIENCES

* Not offered every year as indicated.

Course Number	Course Title
302.690	SOCIAL AND BEHAVIORAL ASPECTS OF PUBLIC HEALTH
302.695	PSYCHOSOCIAL ONCOLOGY
302.820	THESIS RESEARCH SOCIAL AND BEHAVIORAL SCIENCES
302.830	POSTDOCTORAL RESEARCH SOCIAL AND BEHAVIORAL SCIENCES
302.840	SPECIAL STUDIES AND RESEARCH SOCIAL AND BEHAVIORAL SCIENCES
302.861	GRADUATE SEMINAR IN SOCIAL AND BEHAVIORAL SCIENCES
303.602	FUNDAMENTALS OF HEALTH EDUCATION AND HEALTH PROMOTION
303.604	PROGRAM EFFECTIVENESS IN HEALTH ED AND HEALTH PROMOTION
303.606	IMPLEMENTATION AND SUSTAINABILITY OF COMMUNITY-BASED HEALTH PROGRAMS
303.607	COMMUNITY OUTREACH: ISSUES AND PRACTICE
303.609	HEALTH AND HOMELESSNESS
303.810	FIELD PLACEMENT BEHAVIORAL SCIENCES AND HEALTH EDUCATION -- MHS
303.840	SPECIAL STUDIES AND RESEARCH BEHAVIORAL SCIENCES AND HEALTH EDUCATION -- MHS
303.861	GRADUATE SEMINAR IN COMMUNITY-BASED RESEARCH
303.865	M.H.S. SEMINAR IN HEALTH EDUCATION AND HEALTH PROMOTION
303.866	CAREERS IN HEALTH EDUCATION AND HEALTH PROMOTION
304.620	INTRODUCTION TO PERSUASIVE COMMUNICATIONS: THEORIES AND PRACTICE
304.625	COMMUNICATION STRATEGIES FOR HEALTH EDUCATION AND HEALTH PROMOTION
304.627	INTERPERSONAL INFLUENCE IN MEDICAL CARE
305.607	PUBLIC HEALTH PRACTICE
305.610	ISSUES IN INJURY AND VIOLENCE PREVENTION
305.612	EPIDEMIOLOGY OF INJURIES
305.613	DESIGN AND EVALUATION OF INJURY INTERVENTIONS
305.615	OCCUPATION INJURY PREVENTION AND SAFETY PRACTICE
305.623	FUNDAMENTALS OF CLINICAL PREVENTIVE MEDICINE
305.625*	INJURY MECHANISMS
305.630	POLICY, POLITICS, AND TRANSPORTATION SAFETY
305.720	BEHAVIORAL SCIENCES AND INJURY PREVENTION
305.861	GRADUATE SEMINAR IN INJURY RESEARCH AND POLICY
306.650	PUBLIC HEALTH AND THE LAW
306.655	ETHICAL ISSUES IN PUBLIC HEALTH
306.663	LEGAL AND ETHICAL ISSUES IN THE EVOLVING HEALTHCARE SYSTEM
306.665	RESEARCH ETHICS AND INTEGRITY: U.S. AND INTERNATIONAL ISSUES
306.680	ETHICS OF HUMAN SUBJECT RESEARCH
306.685*	BIOETHICS AND THE LAW SEMINAR
306.861	GRADUATE DOCTORAL SEMINAR IN BIOETHICS
306.863	GREENWALL SEMINAR SERIES
308.602	ROLE OF GOVERNMENT IN HEALTH POLICY I
308.603	ROLE OF GOVERNMENT IN HEALTH POLICY II

* Not offered every year as indicated.

Course Number	Course Title
308.610	THE POLITICAL ECONOMY OF SOCIAL INEQUALITIES AND ITS CONSEQUENCES FOR HEALTH AND QUALITY OF LIFE.
308.625	MAKING FEDERAL HEALTH POLICY: THE REAL WASHINGTON DC
308.665	FINANCING AND DELIVERY OF HEALTH SERVICES FOR VULNERABLE POPULATIONS
308.810	FIELD PLACEMENT HEALTH POLICY-MHS
308.840	SPECIAL STUDIES AND RESEARCH HEALTH POLICY-MHS
308.867	M.H.S. SEMINAR IN HEALTH POLICY
309.605	HEALTH ISSUES FOR AGING POPULATIONS
309.606*	LONG-TERM CARE SERVICES FOR AGING POPULATIONS
309.607	INNOVATIONS IN HEALTH CARE FOR AGING POPULATIONS
309.615	INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION
309.616	INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION I
309.617	INTRODUCTION TO METHODS FOR HEALTH SERVICES RESEARCH AND EVALUATION II
309.620	MANAGED CARE AND HEALTH INSURANCE
309.630	EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEMS
309.635	PUBLIC HEALTH PERSPECTIVE ON DISABILITY
309.640	INFORMATICS IN PUBLIC HEALTH
309.712	ASSESSING HEALTH STATUS AND PATIENT OUTCOMES
309.714	PATIENT OUTCOMES AND QUALITY OF HEALTH CARE
309.715	ADVANCED METHODS IN HEALTH SERVICES RESEARCH: RESEARCH DESIGN
309.716	ADVANCED METHODS IN HEALTH SERVICES RESEARCH: ANALYSIS
309.820	THESIS RESEARCH HEALTH SERVICES RESEARCH
309.830	POSTDOCTORAL RESEARCH HEALTH SERVICES RESEARCH
309.840	SPECIAL STUDIES AND RESEARCH HEALTH SERVICES RESEARCH
309.861	GRADUATE SEMINAR IN HEALTH SERVICES RESEARCH
309.862	ADVANCED GRADUATE SEMINAR IN HEALTH SERVICES RESEARCH
311.615	QUALITY OF MEDICAL CARE
311.619*	NEW GENETIC TECHNOLOGIES AND PUBLIC POLICY
312.615	THEORIES OF ORGANIZATION AND MANAGEMENT
312.617	FUNDAMENTALS OF FINANCIAL ACCOUNTING
312.621	STRATEGIC PLANNING AND OPERATIONS
312.623	FINANCIAL MANAGEMENT IN HEALTH CARE I
312.624	FINANCIAL MANAGEMENT IN HEALTH CARE II
312.625	CASE STUDIES IN HEALTH CARE MANAGEMENT
312.633	HEALTH MANAGEMENT INFORMATION SYSTEMS
312.635	HUMAN RESOURCES IN HEALTH ORGANIZATIONS
312.660	MARKETING IN HEALTH CARE ORGANIZATIONS
312.664	INTEREST-BASED NEGOTIATION: PREPARATION ANALYSIS AND PRACTICE
312.665	CONFLICT MANAGEMENT SKILLS TRAINING
312.666	CREATING AGREEMENT AND MANAGING CONFLICT IN A HEALTH CARE SETTING: ADVANCED SKILL DEVELOPMENT

* Not offered every year as indicated.

Course Number	Course Title
312.810	FIELD PLACEMENT HEALTH FINANCE AND MANAGEMENT-MHS
312.840	SPECIAL STUDIES AND RESEARCH HEALTH FINANCE AND MGMT-MHS
312.867	MHS SEMINAR IN HEALTH FINANCE AND MANAGEMENT
313.630	COST-BENEFIT ANALYSIS: THEORY AND TECHNIQUES
313.631	COST-EFFECTIVENESS, COST-UTILITY, AND THEIR APPLICATIONS
313.640	INTRODUCTION TO HEALTH ECONOMICS I
313.641	INTRODUCTION TO HEALTH ECONOMICS II
313.642	INTRODUCTION TO MICROECONOMICS I
313.643	INTRODUCTION TO MICROECONOMICS II
313.650	PUBLIC HEALTH ECONOMICS SEMINAR I
313.651	PUBLIC HEALTH ECONOMICS SEMINAR II
313.653	MICROECONOMIC MODELS IN PUBLIC HEALTH ECONOMICS I
313.654	MICROECONOMIC MODELS IN PUBLIC HEALTH ECONOMICS II
313.790	UNDERSTANDING COST-EFFECTIVENESS ANALYSIS IN HEALTH CARE
315.610	INTRODUCTION TO GENETIC COUNSELING
315.611	INTRODUCTION TO HUMAN GENETICS I
315.612	INTRODUCTION TO HUMAN GENETICS II
315.613	INTRODUCTION TO MEDICAL GENETICS
315.620	GENETIC COUNSELING PRACTICE I
315.621	GENETIC COUNSELING PRACTICE II
315.623*	ETHICAL AND SOCIOCULTURAL IMPLICATIONS OF GENETIC AND REPRODUCTIVE TECHNOLOGIES
315.630	THERAPEUTIC GENETIC COUNSELING I
315.631	THERAPEUTIC GENETIC COUNSELING II
315.650	FACILITATING FAMILY ADAPTATION TO LOSS AND DISABILITY I
315.651	FACILITATING FAMILY ADAPTATION TO LOSS AND DISABILITY II
315.670*	DEVELOPMENTAL BIOLOGY AND HUMAN MALFORMATIONS I
315.671*	DEVELOPMENTAL BIOLOGY AND HUMAN MALFORMATIONS II
315.701	ADVANCED GENETIC COUNSELING I
315.702	ADVANCED GENETIC COUNSELING II
315.820	THESIS RESEARCH: GENETIC COUNSELING
315.840	SS/R: GENETIC COUNSELING
315.851	SUPERVISED CLINICAL ROTATIONS: GENETIC COUNSELING
315.861	GENETIC COUNSELING SEMINAR: TOPICS IN THE FIELD
315.866	CURRENT TOPICS IN MOLECULAR GENETICS
315.870	GENETIC COUNSELING CLINICAL SUPERVISION
315.880	GENETIC COUNSELING PROGRAM THESIS PROPOSAL DEVELOPMENT I
315.881	GENETIC COUNSELING PROGRAM THESIS PROPOSAL DEVELOPMENT II
317.600	INTRODUCTION TO THE RISK SCIENCES AND PUBLIC POLICY
317.605	METHODS IN QUANTITATIVE RISK ASSESSMENT

* Not offered every year as indicated.

Course Number	Course Title
317.610	RISK POLICY, MANAGEMENT AND COMMUNICATION
317.612	QUANTITATIVE METHODS AND CASE STUDIES IN RISK: EXPOSURE ASSESSMENT
317.613	QUANTITATIVE METHODS AND CASE STUDIES IN RISK: DOSE RESPONSE
317.615	TOPICS IN RISK ASSESSMENT

Course Number	Course Title
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DEPARTMENT OF INTERNATIONAL HEALTH

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

220.601	INTRODUCTION TO INTERNATIONAL HEALTH
220.800	MPH CAPSTONE INTERNATIONAL HEALTH
220.810	FIELD PLACEMENT DRPH PROGRAM INTERNATIONAL HEALTH
220.820	THESIS RESEARCH DRPH PROGRAM INTERNATIONAL HEALTH
220.840	SPECIAL STUDIES AND RESEARCH DRPH PROGRAM INTERNATIONAL HEALTH

Health Systems Program

221.605*	HISTORY OF INTERNATIONAL HEALTH AND DEVELOPMENT
221.606	TRAINING METHODS AND CONTINUING EDUCATION FOR HEALTH WORKERS
221.607	CASE STUDIES IN HEALTH POLICY AND FINANCING
221.609	INTERNATIONAL HEALTH REFORM
221.611	FOOD/NUTRITION AND LIVELIHOOD IN HUMANITARIAN EMERGENCIES
221.612	CONFRONTING THE BURDEN OF INJURIES:A GLOBAL PERSPECTIVE
221.613	INTRODUCTION TO HUMANITARIAN EMERGENCIES
221.614	INTERNATIONAL POLITICAL SCIENCE FOR PH PRACTITIONERS
221.616	ETHICS OF PUBLIC HEALTH PRACTICE IN DEVELOPING COUNTRIES
221.620	SUMMARY MEASURES OF POPULATION HEALTH
221.621	ELEMENTS OF ECONOMICS
221.624	URBAN HEALTH IN DEVELOPING COUNTRIES
221.627	ISSUES IN MATERNAL MORTALITY REDUCTION IN DEVELOPING COUNTRIES
221.628	BASIC TECHNIQUES FOR HEALTH PLANNING
221.629	WATER AND SANITATION NEEDS IN COMPLEX HUMANITARIAN EMERGENCIES
221.633	PUBLIC HEALTH ISSUES IN DISASTERS
221.634	STRESS MANAGEMENT FOR RELIEF WORKERS
221.635	CASE STUDIES IN PRIMARY HEALTH CARE
221.637	HEALTH INFORMATION SYSTEMS
221.638	HEALTH SYSTEMS RESEARCH AND EVALUATION IN DEVELOPING COUNTRIES
221.639	REFUGEE HEALTH CARE
221.640	CHILDREN IN CRISIS

Human Nutrition Program

221.641	MEASUREMENT METHODS IN HUMANITARIAN EMERGENCIES
221.661	PROJECT DEVELOPMENT FOR PRIMARY HEALTH CARE IN DEVELOPING COUNTRIES
221.688	SOCIAL AND BEHAVIORAL FOUNDATIONS OF PRIMARY HEALTH CARE
221.706	MANAGEMENT OF HEALTH SYSTEMS IN DEVELOPING COUNTRIES I
221.707	MANAGEMENT OF HEALTH SYSTEMS IN DEVELOPING COUNTRIES II
221.722	QUALITY ASSURANCE MANAGEMENT METHODS FOR DEVELOPING COUNTRIES
221.810	FIELD PLACEMENT HEALTH SYSTEMS
221.820	THESIS RESEARCH HEALTH SYSTEMS

* Not offered every year as indicated.

Course Number	Course Title
221.830	POSTDOCTORAL RESEARCH HEALTH SYSTEMS
221.840	SPECIAL STUDIES AND RESEARCH HEALTH SYSTEMS
221.850	MANAGEMENT OF MALARIA IN COMPLEX EMERGENCIES
221.860	HEALTH SYSTEMS PROGRAM SEMINAR
222.641	PRINCIPLES OF HUMAN NUTRITION
222.642	ASSESSMENT OF NUTRITIONAL STATUS
222.643	HISTORY OF NUTRITION IN PUBLIC HEALTH
222.647	NUTRITION EPIDEMIOLOGY
222.649	INTERNATIONAL NUTRITION
222.651	ADVANCED NUTRIENT METABOLISM
222.654	FOOD, CULTURE, AND NUTRITION
222.655	NUTRITION AND LIFE STAGES
222.656	CRITICAL ANALYSIS OF POPULAR DIETS AND DIETARY SUPPLEMENTS
222.657	FOOD AND NUTRITION POLICY
222.658	CRITICAL THINKING IN NUTRITION
222.810	FIELD PLACEMENT HUMAN NUTRITION
222.820	THESIS RESEARCH HUMAN NUTRITION
222.830	POSTDOCTORAL RESEARCH HUMAN NUTRITION
222.840	SPECIAL STUDIES AND RESEARCH HUMAN NUTRITION
222.860	GRADUATE NUTRITION SEMINAR
222.861	DOCTORAL SEMINAR IN PROPOSAL DEVELOPMENT
Disease Prevention and Control Program	
223.601	TRACKING THE HEALTH OF POPULATIONS
223.662	VACCINE DEVELOPMENT AND APPLICATION
223.663	INFECTIOUS DISEASES AND CHILD SURVIVAL
223.664	DESIGN AND CONDUCT OF COMMUNITY TRIALS
223.671	PUBLIC HEALTH SURVEILLANCE: METHODS AND APPLICATIONS
223.672	DATA MGMT METHODS IN HEALTH RESEARCH STUDIES
223.676*	PUBLIC HEALTH OPHTHALMOLOGY I
223.677*	PUBLIC HEALTH OPHTHALMOLOGY II
223.680	GLOBAL DISEASE CONTROL PROGRAMS AND POLICIES
223.682	CLINICAL ASPECTS TROPICAL DISEASES
223.687	VACCINE POLICY ISSUES
223.689	BIOLOGIC BASIS OF VACCINE DEVELOPMENT
223.705	CLINICAL VACCINE TRIALS AND GOOD CLINICAL PRACTICE (GCP)
223.810	FIELD PLACEMENT DISEASE CONTROL
223.820	THESIS RESEARCH DISEASE CONTROL
223.830	POSTDOCTORAL RESEARCH DISEASE CONTROL
223.840	SPECIAL STUDIES AND RESEARCH DISEASE CONTROL
223.860	DISEASE PREVENTION AND CONTROL PROGRAM SEMINAR

* Not offered every year as indicated.

Course Number	Course Title
223.867	VACCINE SEMINAR
Social and Behavioral Sciences Program	
224.689	FOUNDATIONS OF BEHAVIORAL CHANGE INTERVENTIONS IN DEVELOPING COUNTRIES
224.690	QUALITATIVE RESEARCH I
224.691	QUALITATIVE RESEARCH II
224.692	FORMATIVE RESEARCH FOR BEHAVIORAL AND COMMUNITY INTERVENTIONS
224.693	PROPOSAL DEVELOPMENT FOR SOCIAL SCIENCES RESEARCH
224.810	FIELD PLACEMENT SOCIAL AND BEHAVIORAL INTERVENTIONS
224.820	THESIS RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS
224.830	POSTDOCTORAL RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS
224.840	SPECIAL STUDIES AND RESEARCH SOCIAL AND BEHAVIORAL INTERVENTIONS
224.863*	GRADUATE SEMINAR IN RESEARCH METHODS IN APPLIED MEDICAL ANTHROPOLOGY I
224.864*	GRADUATE SEMINAR IN RESEARCH METHODS IN APPLIED MEDICAL ANTHROPOLOGY II
224.865	GRADUATE SEMINAR IN BEHAVIOR CHANGE AND HEALTH

* Not offered every year as indicated.

Course Number	Course Title
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DEPARTMENT OF MENTAL HEALTH

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

330.601	THE NATURE OF MENTAL DISORDER: DETECTION, MEASUREMENT, CLASSIFICATION
330.602	EPIDEMIOLOGY OF DRUG AND ALCOHOL DEPENDENCE
330.603	PSYCHIATRIC EPIDEMIOLOGY
330.607	PREVENTION AND CONTROL OF MENTAL DISORDERS:PUBLIC HEALTH INTERVENTIONS
330.612	INTRODUCTION TO BEHAVIORAL AND PSYCHIATRIC GENETICS
330.618*	MENTAL HEALTH IN LATER LIFE
330.622	DEVELOPMENT AND PSYCHOPATHOLOGY OVER THE LIFE SPAN
330.623	NEUROPSYCHOLOGY OF MENTAL DISORDERS
330.630	BEHAVIORAL HEALTH IN THE AGE OF MANAGED CARE
330.641	PREVENTION AND CONTROL OF ALCOHOL AND DRUG ABUSE
330.643	ALCOHOL, TOBACCO, OTHER DRUGS AND PUBLIC HEALTH I
330.644	ALCOHOL, TOBACCO, OTHER DRUGS & PUBLIC HEALTH
330.645	ALCOHOL, TOBACCO, OTHER DRUGS AND PUBLIC HEALTH III
330.650	GROUP RANDOMIZED PREVENTION TRIALS
330.651	SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES I
330.652	SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES II
330.653	SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES III
330.654	SEMINAR ON DRUG ABUSE PROGRAM PLANNING IN DEVELOPING COUNTRIES IV
330.655	FIELD VISITS IN DRUG ABUSE PROGRAM PLANNING
330.657	STATISTICS FOR PSYCHOSOCIAL RESEARCH: MEASUREMENT
330.660	SEMINAR ON METHODS IN PUBLIC MENTAL HEALTH RESEARCH
330.661	SOCIAL AND PSYCHOLOGICAL PROCESSES IN THE DEVELOPMENT OF MENTAL AND BEHAVIORAL DISORDERS
330.666	LONGITUDINAL ANALYSIS WITH LATENT VARIABLES
330.667	MENTAL HEALTH AND THE LAW
330.800	MPH CAPSTONE MENTAL HEALTH
330.810	FIELD PLACEMENT MENTAL HEALTH
330.820	THESIS RESEARCH MENTAL HEALTH
330.830	POSTDOCTORAL RESEARCH MENTAL HEALTH
330.840	SPECIAL STUDIES AND RESEARCH MENTAL HEALTH
330.850	SS/R: INTERNATIONAL PERSPECTIVES ON PREVENTION AND TREATMENT OF HIV AND DRUG DEPENDENCE

* Not offered every year as indicated.

Course Number	Course Title
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DEPARTMENT OF MOLECULAR MICROBIOLOGY AND IMMUNOLOGY

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

260.600	INTRODUCTION TO THE BIOMEDICAL SCIENCES
260.601	BIOLOGICAL BASIS OF PUBLIC HEALTH
260.608	ADVANCED TOPICS IN AIDS RESEARCH
260.611	PRINCIPLES OF IMMUNOLOGY I
260.612	PRINCIPLES OF IMMUNOLOGY II
260.622*	PRINCIPLES OF BACTERIAL INFECTION
260.623	FUNDAMENTAL VIROLOGY
260.624*	ADVANCED VIROLOGY
260.625	SCIENTIFIC METHOD APPLIED TO GRANT WRITING
260.626	STI PREVENTION: USING EPIDEMIOLOGY TO INFORM POLICY AND PROGRAM
260.627	PATHOGENESIS OF BACTERIAL INFECTIONS
260.628	ADVANCED TOPICS IN BACTERIAL PATHOGENESIS
260.629	THE SEXUALLY TRANSMITTED DISEASE: THEIR EPI AND CONTROL I
260.630	THE SEXUALLY TRANSMITTED DISEASE: THEIR EPI AND CONTROL II
260.632	DIAGNOSTIC PARASITOLOGY
260.635	BIOLOGY OF PARASITISM
260.650	VECTOR BIOLOGY AND VECTOR-BORNE DISEASES
260.652	PRINCIPLES OF PUBLIC HEALTH ECOLOGY
260.656	MALARIOLOGY
260.662*	PRINCIPLES OF ANIMAL PATHOLOGY AND GENETICALLY ENGINEERED MICE
260.663	BIOLOGICAL RESPONSE TO BIOMATERIALS
260.664	MOLECULAR ENTOMOLOGY
260.665*	BIOLOGICAL BASIS OF AGING
260.711*	PRINCIPLES OF NEUROIMMUNOLOGY
260.712	CLINICAL IMMUNOLOGY
260.714*	IMMUNOGENETICS
260.717	GRADUATE IMMUNOLOGY: THE IMMUNE RESPONSE
260.800	MPH CAPSTONE MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.801	TOPICS IN IMMUNOLOGY I
260.802	TOPICS IN IMMUNOLOGY II
260.810	FIELD PLACEMENT MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.811	FIELD STUDIES IN ECOLOGY AND BEHAVIOR
260.813*	SURVIVAL SKILLS FOR ACADEMIA IN THE LAB SCIENCES
260.820	THESIS RESEARCH MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.821	RESEARCH FORUM IN MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.822	SEMINARS IN RESEARCH IN MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.823*	SPECIAL TOPICS IN TRANSPLANTATION IMMUNOLOGY

* Not offered every year as indicated.

Course Number	Course Title
260.830	POSTDOCTORAL RESEARCH MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.840	SS/R: MOLECULAR MICROBIOLOGY AND IMMUNOLOGY
260.841	SS/R: PROTEIN BIOINFORMATICS
260.851	LABORATORY ROTATIONS
260.852	MOLECULAR BIOLOGY LITERATURE
260.853	ANIMAL PATHOLOGY LABORATORY

Course Number	Course Title
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DEPARTMENT OF POPULATION AND FAMILY HEALTH SCIENCES

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

380.600	PRINCIPLES OF POPULATION CHANGE
380.603	DEMOGRAPHIC METHODS FOR PUBLIC HEALTH
380.604	PRINCIPLES OF HEALTH AND DEVELOPMENT ACROSS THE LIFE SPAN
380.611	EVALUATION RESEARCH I
380.612	EVALUATION RESEARCH II
380.613	EVALUATION RESEARCH III
380.614	EVALUATION RESEARCH IV
380.623	ADOLESCENCE AND ADOLESCENT HEALTH
380.624	MATERNAL AND CHILD HEALTH LEGISLATION AND PROGRAMS
380.625	ATTITUDES, PROGRAMS, AND POLICIES FOR CHILDREN WITH SPECIAL HEALTH CARE NEEDS
380.626	CHILD HEALTH
380.630	CONTEMPORARY ISSUES IN HEALTH COMMUNICATION
380.631	HEALTH COMMUNICATION PROGRAMS I
380.632	HEALTH COMMUNICATION PROGRAMS II
380.633	THEORY AND RESEARCH IN HEALTH COMMUNICATION
380.641	GROWTH AND DEVELOPMENT I: FETUS AND INFANT
380.642	GROWTH AND DEVELOPMENT II: PRESCHOOL AND SCHOOL AGE CHILD
380.643	GROWTH AND DEVELOPMENT III: ADOLESCENCE
380.652	INTERMEDIATE DEMOGRAPHIC METHODS
380.653	STABLE AND GENERAL POPULATION MODELS
380.654	DEMOGRAPHIC ESTIMATIONS FROM INCOMPLETE OR INACCURATE DATA
380.655	SOCIAL AND ECONOMIC ASPECTS OF HUMAN FERTILITY
380.656*	SOCIAL, BEHAVIORAL, AND GENETIC DETERMINANTS OF MORTALITY
380.657	ECONOMICS OF MORTALITY, MORBIDITY AND FERTILITY
380.658	ECONOMICS OF GENDER AND FAMILY
380.661	CLINICAL ASPECTS OF MATERNAL AND NEWBORN HEALTH
380.662	ISSUES IN PERINATAL RESEARCH
380.664	REPRODUCTIVE AND PERINATAL EPIDEMIOLOGY
380.665	FAMILY PLANNING POLICIES AND PROGRAMS
380.666	WOMEN'S HEALTH
380.667	WOMEN'S HEALTH POLICY
380.668	INTERNATIONAL PERSPECTIVES ON WOMEN, GENDER, AND HEALTH
380.671	ADOLESCENT PREGNANCY--CAUSES, CONSEQUENCES, INTERVENTIONS
380.681	STRATEGIC LEADERSHIP AND MANAGEMENT IN POPULATION AND REPRODUCTIVE HEALTH
380.690	INTRODUCTION TO DEMOGRAPHIC METHODS I
380.691	INTRODUCTION TO DEMOGRAPHIC METHODS II

* Not offered every year as indicated.

Course Number	Course Title
380.711	ISSUES IN SURVEY RESEARCH
380.712	METHODS IN ANALYSIS OF LARGE POPULATION SURVEYS
380.713	MONITORING AND EVALUATION OF TRAINING PROGRAMS
380.721	SCHOOLS AND HEALTH
380.725	SOCIAL ECOLOGY OF ADOLESCENT HEALTH
380.726	PROBLEM SOLVING FOR IMMUNIZATION PROGRAMS
380.731	HEALTH COMMUNICATION PROGRAMS I
380.732	HEALTH COMMUNICATION PROGRAMS II
380.733	COMMUNICATION NETWORK ANALYSIS IN PUBLIC HEALTH PROGRAMS
380.734	GRADUATE SEMINAR IN HEALTH COMMUNICATION
380.735	CHILDREN, MEDIA, AND HEALTH
380.743	DEVELOPMENT AND INTERVENTION IN AT-RISK INFANTS AND CHILDREN
380.751	APPLIED MATHEMATICAL DEMOGRAPHY I
380.752	APPLIED MATHEMATICAL DEMOGRAPHY II
380.753*	DYNAMICS OF POPULATION AGING
380.760	CLINICAL ASPECTS OF REPRODUCTIVE HEALTH
380.762	HIV INFECTION IN WOMEN, CHILDREN, AND ADOLESCENTS
380.763	PROJECT DESIGN FOR REPRODUCTIVE HEALTH PROGRAMS IN DEVELOPING COUNTRIES
380.764	REPRODUCTIVE HEALTH RESEARCH IN DEVELOPING COUNTRIES: ISSUES AND METHODS
380.765	PREVENTING INFANT MORTALITY AND PROMOTING THE HEALTH OF WOMEN, INFANTS AND CHILDREN
380.766	ADVANCED SEMINAR IN PERINATAL RESEARCH
380.767	COUPLES AND REPRODUCTIVE HEALTH
380.800	MPH CAPSTONE POPULATION AND FAMILY HEALTH SCIENCES
380.810	FIELD PLACEMENT POPULATION AND FAMILY HEALTH SCIENCES
380.812	APPLIED EXPERIENCE IN HEALTH COMMUNICATION
380.820	THESIS RESEARCH POPULATION AND FAMILY HEALTH SCIENCES
380.830	POSTDOCTORAL RESEARCH POPULATION AND FAMILY HEALTH SCIENCES
380.840	SPECIAL STUDIES AND RESEARCH POPULATION AND FAMILY HEALTH SCIENCES
380.850	POPULATION STUDIES RESEARCH SEMINAR
380.860	RESEARCH SEMINAR IN POPULATION AND FAMILY HEALTH SCIENCES
380.861	RESEARCH SEMINAR IN REPRODUCTIVE, PERINATAL, AND WOMENS HEALTH
380.862	RESEARCH SEMINAR IN HEALTH COMMUNICATION
380.863	RESEARCH SEMINAR IN CHILD HEALTH AND DEVELOPMENT

* Not offered every year as indicated.

**Course Course
Number Title**

EXTRADEPARTMENTAL COURSES

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

550.001	ENGLISH FOR ACADEMIC PURPOSES
550.603	SCIENTIFIC WRITING I
550.604	SCIENTIFIC WRITING II
550.605	HISTORY OF PUBLIC HEALTH
550.608	PROBLEM SOLVING IN PUBLIC HEALTH
550.630	PUBLIC HEALTH BIOLOGY
550.691	QUANTTTATIVE METHODS IN PUBLIC HEALTH I
550.692	QUANTTTATIVE METHODS IN PUBLIC HEALTH II
550.693	QUANTTTATIVE METHODS IN PUBLIC HEALTH III
550.840	SS/R: PUBLIC HEALTH
550.860	RESEARCH ETHICS
550.861*	CURRENT TOPICS IN PUBLIC HEALTH
550.862	CURRENT ISSUES IN PUBLIC HEALTH
550.863	MPH INDIVIDUALIZED GOALS ANALYSIS
550.865	PUBLIC HEALTH PERSPECTIVES ON RESEARCH
550.873	DRPH SEMINAR: ADVANCED PUBLIC HEALTH PRACTICE
550.880	SS/R: GENERAL PREVENTIVE MEDICINE RESIDENCY-MPH
550.890	SS/R: GENERAL PREVENTIVE MEDICINE RESIDENCY-RESIDENCY YEAR

Interdepartmental Management Sequence: Departments of Health Policy and Management and International Health

551.601	MANAGING HEALTH SERVICES ORGANIZATIONS
551.602	EXERCISES IN MANAGING HEALTH SERVICES ORGANIZATIONS
551.603	FUNDAMENTALS OF BUDGETING AND FINANCIAL MANAGEMENT
551.604	QUANTTTATIVE TOOLS FOR MANAGERS
551.605	CASE STUDIES IN MANAGEMENT DECISION-MAKING
551.606	STUDIES IN HEALTHCARE LEADERSHIP AND MANAGEMENT

* Not offered every year as indicated.

**Course
Number** **Course
Title**

CLINICAL INVESTIGATION COURSES

For full description of courses, please visit the School's search engine at <http://commprojects.jhsph.edu/courses/>.

390.611	ANALYTICAL METHODS IN CLINICAL INVESTIGATION
390.612*	DESIGN AND ANALYSIS OF CLINICAL TRIALS
390.631	PRINCIPLES OF DRUG DEVELOPMENT
390.651	TOPICS IN CLINICAL INVESTIGATION
390.671	DESIGN OF CLINICAL STUDIES
390.672	QUANTITATIVE ANALYSIS OF CLINICAL DATA
390.673	ETHICAL AND REGULATORY ISSUES IN CLINICAL RESEARCH
390.675	OUTCOMES AND EFFECTIVENESS RESEARCH
390.701	THESIS PREPARATION (GRANT WRITING) I
390.702	THESIS PREPARATION (GRANT WRITING) II
390.703	PRESENTATION SKILLS
390.710	BIOMEDICAL WRITING I
390.711	BIOMEDICAL WRITING II
390.712	WRITING THE BIOMEDICAL RESEARCH PAPER I
390.713	WRITING THE BIOMEDICAL RESEARCH PAPER II
390.751	SEMINARS IN CLINICAL INVESTIGATION
390.752	SEMINARS IN CLINICAL INVESTIGATION
390.801	PROFESIONAL GOALS AND OBJECTIVES
390.820	THESIS RESEARCH IN CLINICAL INVESTIGATION
390.840	SPECIAL STUDIES AND RESEARCH IN CLINICAL INVESTIGATION
390.855	RESEARCH FORUM

* Not offered every year as indicated.

School-affiliated Centers and Institutes

Since the School was founded, its graduate programs have been based on a cardinal principle of the inseparability of research, practice, service and education. Faculty are engaged in investigations that cover a wide variety of disciplines and interests. In addition, there are many education, practice and research centers that operate as departmental and interdepartmental bases for a wide range of activities related to public health. A partial list of these centers and institutes may be found below. Further information may be found in the “Research and Centers” area of the School’s website: www.jhsph.edu/researchcenters/index.html, where all centers are identified and a link to each center’s website is provided.

Adolescent Health Promotion & Disease Prevention
Aging and Health
Alternative to Animal Testing
American Indian Health
Autism and Developmental Disabilities Epidemiology
Autoimmune Disease Research
Phoebe R. Berman Bioethics Institute
Biostatistics
Clinical Trials
Communication Programs
Evidence-Based Practice
Excellence in Community Environmental Health Practice
Excellence in Environmental Health Tracking
Bill and Melinda Gates Institute for Population & Reproductive Health
Global Tobacco Control
Gun Policy and Research
Health Disparities Solutions
Health Effects of Global Environmental Change
Health Services Research and Development
Human Nutrition
Immunization Research
Injury Research & Policy

Institute for International Programs
International Emergency, Disaster and Refugee Studies
Law and the Public’s Health
Livable Future
Malaria Research Institute
Mid-Atlantic Health Leadership Institute
Mid-Atlantic Public Health Training
Occupational Safety & Health
Population Center
Primary Care Policy Center Underserved Populations
Public Health Preparedness
Reproductive Research
Research on Services for Severe Mental Illness
Risk Sciences & Public Policy Institute
Roger E. Lipitz Center for Integrated Health Care
Training Center for Public Health Research
Tuberculosis Research
Urban Environmental Health
Urban Health
Vaccine Safety
Water and Health
Welch Center for Prevention, Epidemiology and Clinical Research
Women’s and Children’s Health Policy

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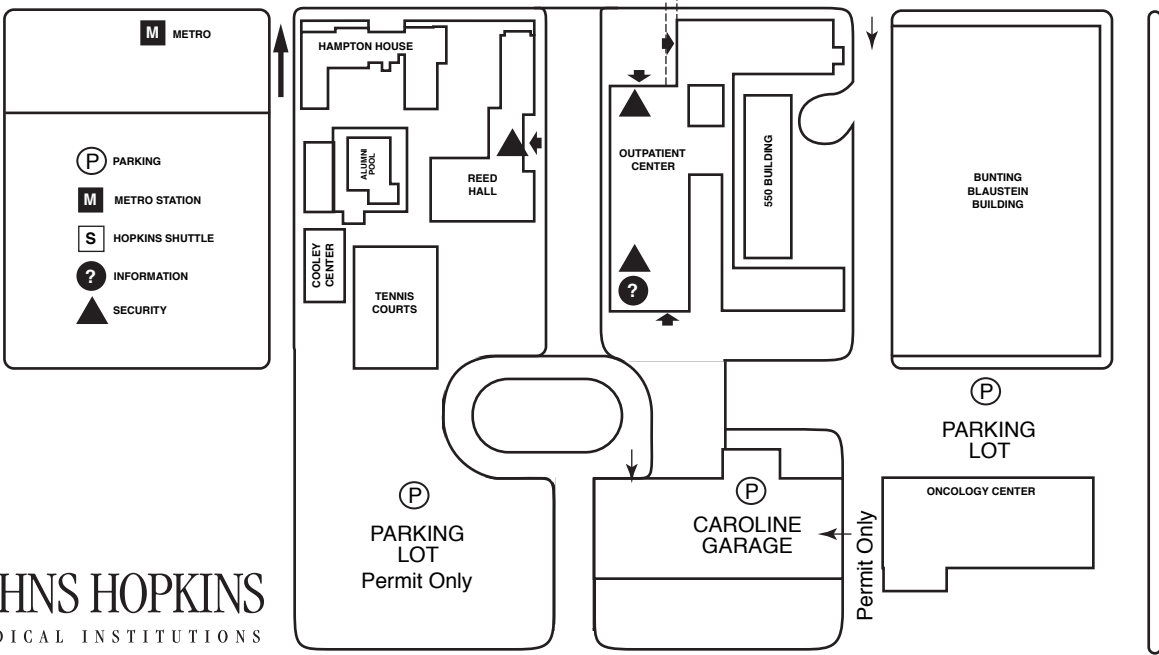
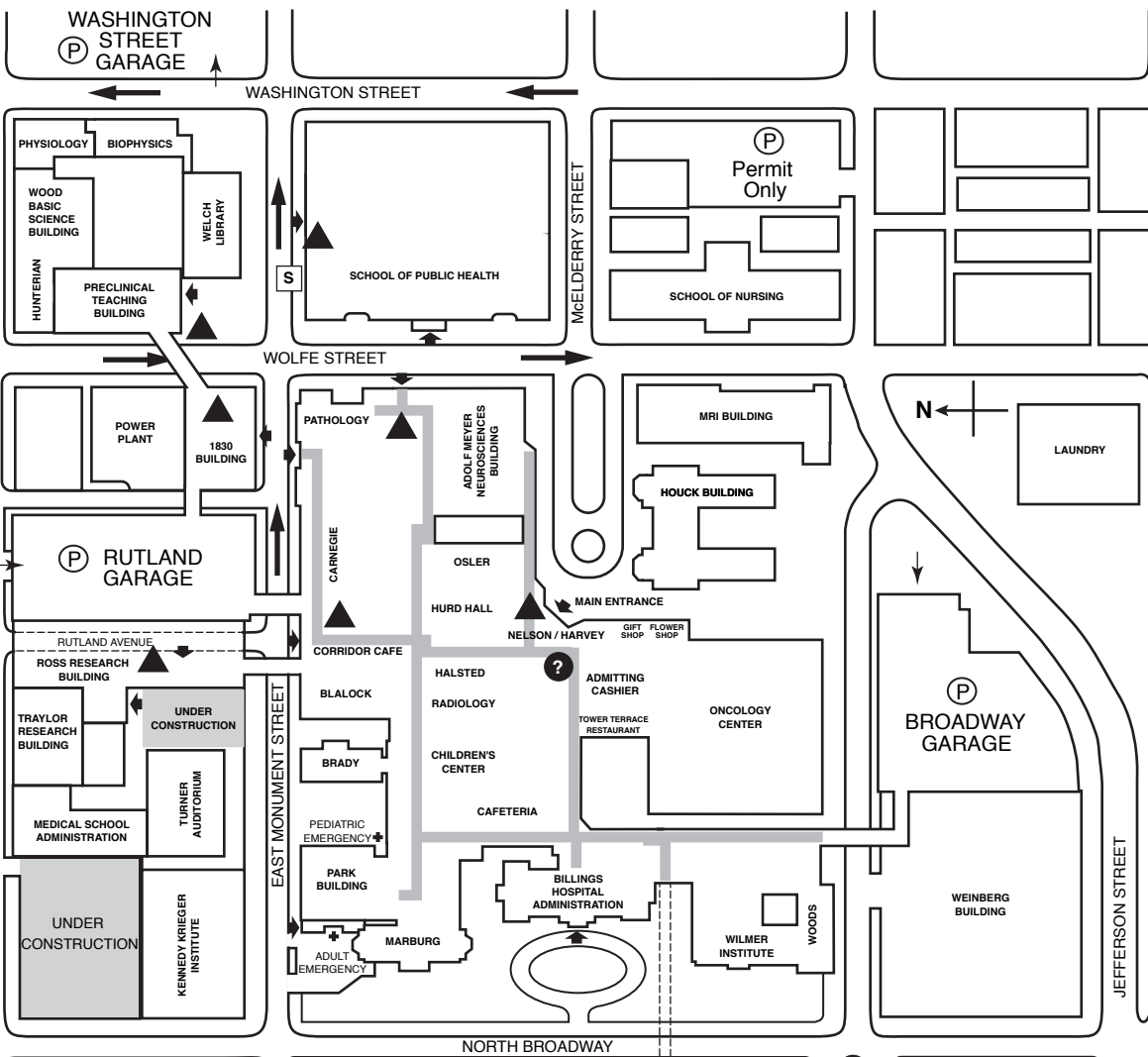
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- METRO STATION
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- SECURITY

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P
PARKING LOT

P
PARKING LOT
Permit Only

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CAROLINE GARAGE

Permit Only

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BROADWAY GARAGE

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RUTLAND GARAGE

P
WASHINGTON STREET GARAGE

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Permit Only

N

M METRO

CAROLINE STREET

EAST MADISON STREET

EAST MONUMENT STREET

JEFFERSON STREET

NORTH BROADWAY

WOLFE STREET

WASHINGTON STREET

McDERRY STREET

WASHINGTON STREET GARAGE

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HALSTED RADIOLOGY
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CAFETERIA

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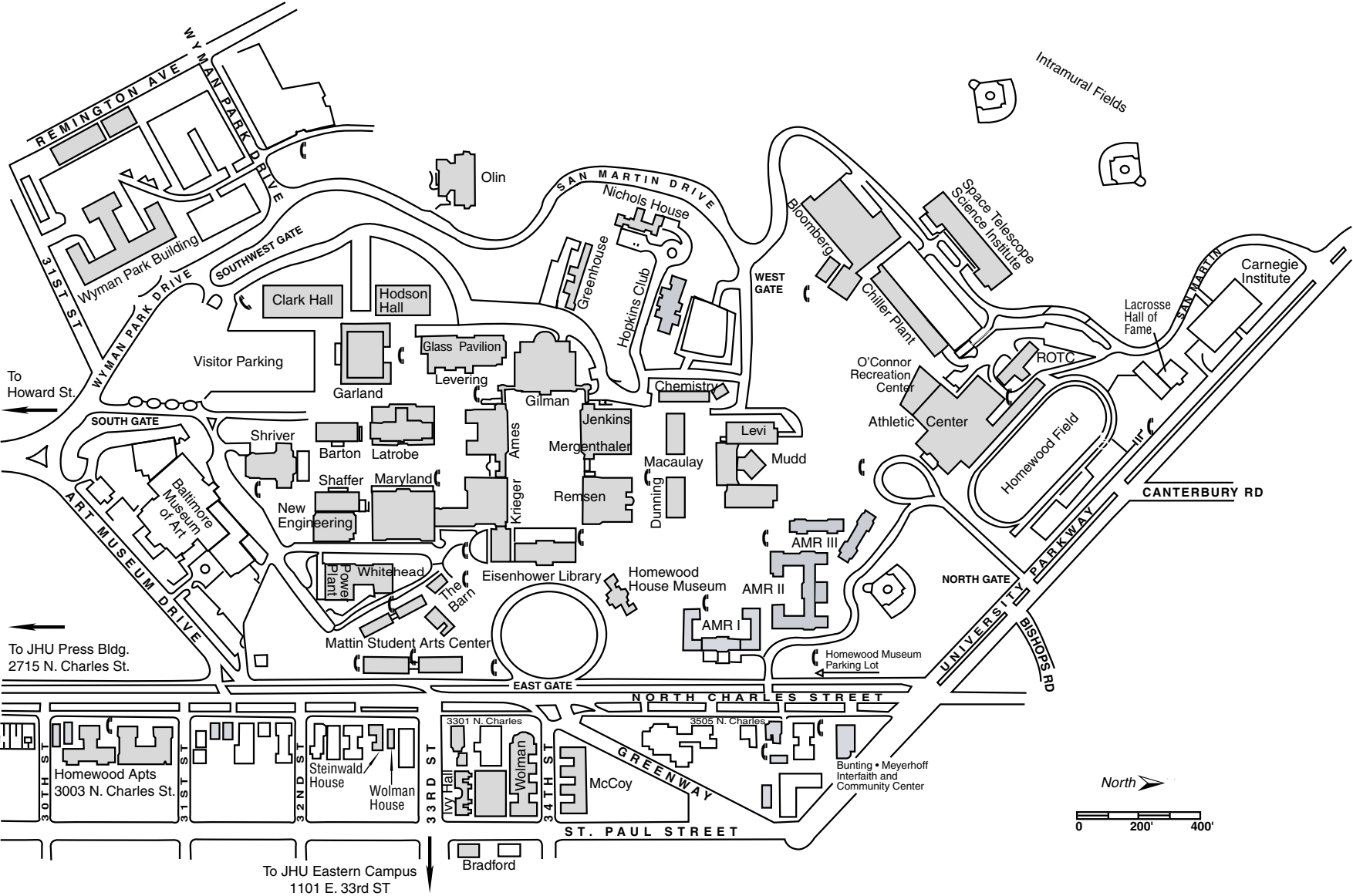
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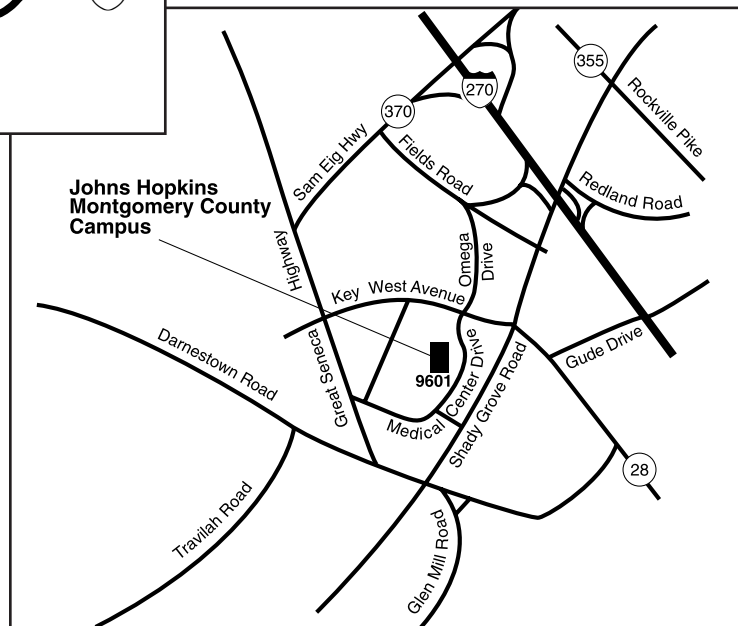
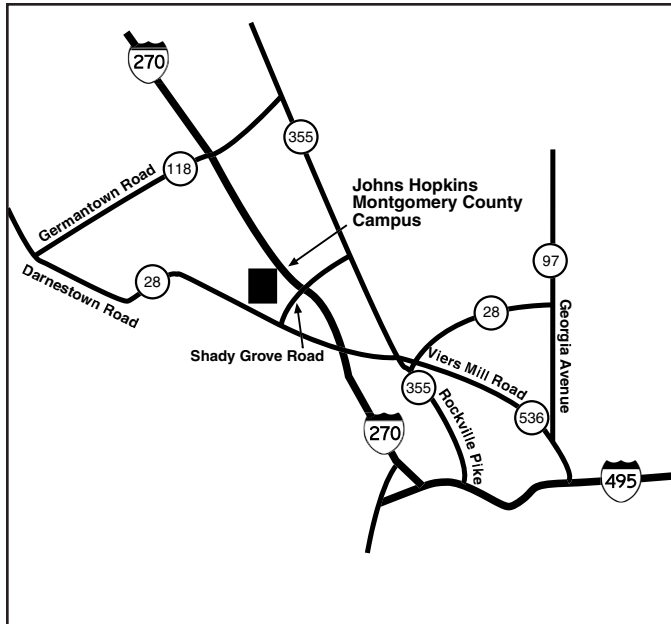
Homewood Campus

3400 North Charles Street
Baltimore, MD 21218



Montgomery County Center

9601 Medical Center Drive
 Rockville, Maryland 20850
 (301) 294-7000



Directions to the Montgomery County Center

From Baltimore (via major arteries)

Take Beltway (I-695) to I-95 south. Continue toward Washington on 95 to the Capital Beltway (I-495). Take 495 west to I-270. From 270 North, take the Shady Grove exit. Make a left onto Shady Grove Road and proceed straight to Key West Avenue. Turn right at Key West Avenue and follow to first intersection. Make a left on Medical Center Drive. The Montgomery County Center is on the right.

From Washington

Take 495 west to I-270. From 270 North, take the Shady Grove exit. Make a left onto Shady Grove Road and proceed straight to Key West Avenue. Turn right at Key West Avenue and follow to first intersection. Make a left on Medical Center Drive. The Montgomery County Center is on the right.

Directions to the School of Public Health

The School of Public Health is located at 615 N. Wolfe Street, directly across from the Johns Hopkins Hospital, in East Baltimore.

From the Baltimore Beltway (I-695) north or east side: Take I-695 to exit 35, Pulaski Highway (U.S. 40). Proceed west along Pulaski Highway, which becomes Orleans Street. Turn right on Washington Street, proceed three blocks (passing the rear of the School) and park in the Washington Street garage on the right.

From the Baltimore Beltway (I-695) south or west side: Take I-695 to exit 15, Baltimore National Pike (U.S. 40), which becomes Mulberry Street and then Orleans Street. Turn left at Washington Street, proceed three blocks (passing the rear of the School) and park in the Washington Street garage on the right.

From I-95 (southbound): Remain on I-95 past the I-695 interchange (the Baltimore Beltway), then stay to the left and take I-895 towards the Harbor Tunnel thruway. From I-895, take the first exit on the right (marked "Downtown/Route 40") to Moravia Road. Turn left at the traffic signal and then right at the second exit (marked "Pulaski Highway/Route 40"). After about 1.8 miles, Pulaski Highway becomes Orleans Street. Bear right and stay on Orleans about another mile to Washington Street. Turn right on Washington Street, proceed three blocks (passing the rear of the School) and park in the Washington Street garage on the right.

From I-95 (northbound): Approaching Baltimore, take exit 53 (I-395, marked "Downtown/Inner Harbor"). Stay to the right and exit onto Conway Street. Stay in the center lane and follow Conway Street to the third traffic signal, at Light Street. Turn left onto Light Street, staying in the right lanes, which will merge with Pratt Street. Follow Pratt Street for approximately 1.25 miles. Turn left on Washington Street, proceed eight blocks (passing the rear of the School) and park in the Washington Street garage on the right.

From I-70 (eastbound): Exit onto I-695 west (the Baltimore Beltway). Proceed about 6 miles to exit 11-A, I-95 north. Proceed using directions above from I-95 (northbound).

Directions to the Homewood Campus

The Homewood Campus (Schools of Arts & Sciences, Continuing Studies, and Engineering) is located at 3400 North Charles Street in Baltimore.

From I-95 (southbound) or from I-695 (the Baltimore Beltway) north or east: Take I-695 toward Towson. Take the exit for I-83 south. Proceed using directions from I-83 (below).

From I-95 (northbound): Exit at I-395, then take the exit to Martin Luther King Jr. Blvd. and follow the directions for Maryland 295 (below).

From Maryland 295 (the Baltimore-Washington Parkway): Entering Baltimore, the parkway becomes Russell Street. Stay on Russell Street until (with Oriole Park at Camden Yards before you) you reach the right-hand exit marked Martin Luther King Jr. Boulevard (look carefully for this; the signs are small). Take King Boulevard until it ends at Howard Street (remain in one of the middle lanes of King Boulevard to avoid a premature forced right or left turn). Turn left at Howard Street and proceed about 2 miles. One block past 29th Street (where Howard Street becomes Art Museum Drive), turn left at the traffic island (just before the Baltimore Museum of Art) onto Wyman Park Drive. Take an almost immediate right through the University gates. A visitors lot and parking meters are on the left.

From I-83 (southbound, the Jones Falls Expressway): Take the 28th Street exit to 28th Street east. Turn left on Howard Street. One block past 29th Street (where Howard Street becomes Art Museum Drive), turn left at the traffic island (just before the Baltimore Museum of Art) onto Wyman Park Drive. Take an almost immediate right through the University gates. A visitors lot and parking meters are on the left.