Department of Epidemiology Fall 2018 Courses

**PHP 0850 – Fundamentals of Epidemiology, Dr. Stephen Buka**  
T/Th 2:30-3:50  
As the cornerstone of public health, a strong foundation in epidemiology provides students with the ability to investigate, clarify and criticize claims of disease causation. This course provides students with a foundation in basic epidemiologic concepts and methods. Key measures of disease occurrence and effects used in epidemiology will be discussed; strengths and weaknesses of alternative epidemiologic study designs will be examined. Interpreting epidemiologic evidence to inform public health policy and practice will be emphasized throughout the course.  
Open to Public Health concentrators and others by permission; Class limit 80.

**PHP 2090 - Research Grant Writing for Public Health, Dr. Joseph Braun**  
W 9:30-12:00  
This course focuses on providing knowledge and experience in creating high quality public health research grant applications. Course objectives include developing significant and innovative scientific hypotheses, learning principles of effective written communication, and developing a research grant application suitable to submit for funding. Designed for Public Health School PhD students, post-doctoral fellows, and Masters students with advanced degrees (e.g. MD, PhD). Prerequisite: PHP 2120 or PHP 2150 or instructor permission.

**PHP 2030 – Clinical Trials Methodology, Dr. Ilana Gareen**  
M 1:00-3:30  
We will examine the modern clinical trial as a methodology for evaluating interventions related to treatment, rehabilitation, prevention and diagnosis. Topics include the history and rationale for clinical trials, ethical issues, study design, protocol development, sample size considerations, quality assurance, statistical analysis, systematic reviews and meta-analysis, and reporting of results. Extensively illustrated with examples from various fields of health care research. Recommended prerequisites: introductory epidemiology and statistics. Pre-requisites: (PHP 2120 or PHP 2150) and either PHP 2508, 2510, or 2520. Open to graduate students only.

**PHP 2250 - Advanced Quantitative Methods in Epidemiologic Research, Dr. Chanelle Howe**  
T/TH 1:00-2:20  
This course provides students with conceptual and quantitative tools based on counterfactual theory to make causal inference using data obtained from observational studies. Causal diagrams will be used to provide alternative definitions of and inform correcting for common biases. Non-, semi-, and fully parametric methods for addressing these biases will be discussed. These methods include standard regression, instrumental variables, propensity scores, inverse probability weighting, and marginal structural models. Settings when such methods may not be appropriate will be emphasized. Prerequisite: PHP 2200 and 2511; or PHP 2200 and 2508; or instructor permission. Enrollment limited to 25 graduate students.

**PHP 1700 - Current Topics in Environmental Health, Dr. Karl Kelsey**  
F 1:00-3:30
This course is designed to introduce students to the field of environmental health, and demonstrate how environmental health is integrated into various aspects of our lives, both directly and indirectly. Topics to be covered include: toxic metals, vector-borne disease, food safety, water quality, radiation, pesticides, air quality, hazardous waste, risk assessment, and the role of the community in environmental health. Several topics will be presented by guest speakers so that students can learn from the expertise of professionals in the field. Enrollment limited to 65.

**PHP 2018 - Epidemiology of Cardio-Metabolic Health, Dr. Simin Liu**
T 9:30-12:00

This course surveys the entire landscape of the nutritional, biochemical, and genetic aspects of cardiometabolic health addressing issues of obesity, diabetes, metabolic syndrome, and their micro- and macro-vascular complications. Students will learn about both the descriptive and analytical epidemiology of these seemingly distinct but clearly clustered disorders including the so-called metabolic syndrome comprehensively and in-depth. International comparison of prevalent data in different social contexts will also be reviewed, so that strategies for prevention by either changing our cultures or natures can be appreciated and debated with a better understanding of the related issues confronted by public health and medical professionals.

**PHP 1920 - Social Determinants of Health, Dr. Eric Loucks**
M 3:00-5:30

The course provides an overview of social determinants of health. Examples of topics include health effects of educational attainment, social integration, neighborhood socioeconomic characteristics, racial discrimination, gender, income inequality, childhood socioeconomic circumstances, parental neglect, and job strain. Mixed teaching methods are used, including small group discussions, problem-based learning and guest lectures. Open to graduate students and advanced undergraduates.

**PHP 2120 - Introduction to Methods in Epidemiologic Research, Dr. Mark Lurie**
T/Th 10:30-11:50

Epidemiology quantifies patterns and determinants of human population health, with a goal of reducing the burden of disease, injury, and disability. An intensive first course in epidemiological methods, students learn core principles of study design and data analysis through critiques of published epidemiological studies as well as hands on practice through weekly exercises and assignments. This is a graduate-level course aimed at masters and PhD students. The course is not open to first year students or sophomores but may be available for advanced undergraduates with the instructor's permission.

**PHP 2220H - The Epidemiology, Treatment and Prevention of HIV, Dr. Mark Lurie**
Th 2:30-5:00

The purpose of this seminar is to use HIV as an example to introduce students to a variety of methodological issues in the epidemiologic study of infectious diseases. While we will study the treatment and prevention of HIV in detail, emphasizing the current state of knowledge and critiquing the most recent literature, this course aims to use HIV as an example to better understand the variety of methodological issues in global and domestic infectious disease
epidemiology today. Enrollment limited to 25 students. Prerequisites: PHP 0850 or PHP 1854 (undergraduates); PHP 2120 or 2150 and PHP 2508 or 2511 (graduate students).

**PHP 1070 - The Burden of Disease in Developing Countries, Dr. Stephen McGarvey**
M/W 8:30-9:50

Defines and critically examines environmental, epidemiologic, demographic, biomedical, and anthropological perspectives on health and disease in developing countries. Emphasis on changes in the underlying causes of morbidity and mortality during economic development. Focuses on the biosocial ecology of diseases. Required major term paper worth 50% of final grade is scholarly centerpiece of course. Weekly discussion sections and small group research projects supplement the two exams and term paper. Guest lecturers cover different diseases and public health perspectives. Enrollment limited to 65.

**PHP 1710 - Climate Change and Human Health, Dr. Gregory Wellenius**
M/W 1:30-2:50

Global climate change is occurring and these changes have the potential to profoundly influence human health. This course provides students with a broad overview of the diverse impacts of projected climate change on human health, including effects of changing temperatures, extreme weather events, infectious and non-infectious waterborne threats, vector-borne disease, air pollution, the physical and built environment and policies to promote mitigation and adaptation. Students will explore multiple sides of controversial issues through lively and informed class discussions, writing exercises, and participation in a series of end-of-term debates. Enrollment is limited to 20 students.

**PHP 2150 - Foundations in Epidemiologic Research Methods, Dr. Tongzhang Zheng**
T/Th 10:30-11:50

The overall objective of this course is to provide students with a strong foundation in epidemiologic research methods. This is the first of a two- or four-course sequence in epidemiologic methods aimed at students who expect to eventually conduct their own epidemiologic research. There will be a strong quantitative focus in this course. By the end of the foundations course, students should be sufficiently familiar with epidemiologic research methods to begin to apply these methods to their own work. Prerequisite: PHP 2507 or 2510 (either may be taken concurrently); the typical student will also have some introductory knowledge of epidemiology.

**PHP 2220D – Reproductive Epidemiology: Function, Dysfunction, and Control of Fertility, Dr. David Savitz**
Th 2:30-5:00

This course provides an overview of topics related to reproductive epidemiology, including substantive epidemiologic information, methodologic issues pertinent to reproductive health, and maternal and child health services and programmatic topics. The first half of class sessions will be lecture-based, while the second half will involve the discussion of a published research study in a journal club format, and students are expected to actively participate in class discussions. After several introductory lectures, students will select topics and will be responsible for organizing a presentation and discussion under the instructors’ supervision.
PHP 2710: Interdisciplinary Perspectives on Disability and Death in the Global South, Dr. Steve McGarvey
T 1:00-3:30

This course is a weekly core seminar required for students in the ScM degree program in Global Public Health during their first semester. The seminar will foster critical and integrative thinking and writing about the leading causes of disease, disability and death in low and middle income countries (LMICs), and potential solutions to prevent and ameliorate the burden of disease. Other interested and eligible students (see prerequisites below) will be welcome. Class size will be kept to a maximum of 15 students.