32nd Annual Graduate Summer Institute of Epidemiology and Biostatistics

JUNE 16—JULY 3, 2014

www.jhsph.edu/summerepi

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

GENERAL INFORMATION

Welcome to the 32nd Annual Graduate Summer Institute of Epidemiology and Biostatistics offered by the departments of Epidemiology and Biostatistics of the Johns Hopkins Bloomberg School of Public Health during the three-week period, June 16–July 3, 2014. For information about registration, courses (specific course offerings, content, instructors, readings and institute check-in) and housing, contact Ayesha Khan by calling (410) 955-7158, or by email at akhan@jhsph.edu.

CURRICULUM

This program is intended to develop an understanding of basic and advanced principles of epidemiologic research and will offer courses that present epidemiologic methods and their application to the study of the natural history and etiology of disease. After completing the program, participants will be able to intelligently 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.

In addition to the basic and advanced courses on epidemiologic and biostatistical concepts and methods, the Summer Institute schedule allows students to choose combinations of courses that either expand their breadth of knowledge or delve more deeply into a specialized topic area of their choice. Such topic areas include observational and experimental study designs, multiple facets of genetic epidemiology and statistical analysis techniques.

COURSE CREDIT

Graduate Summer Institute of Epidemiology and Biostatistics participants may register for academic credit or non-credit. Please refer to course descriptions for the number of credits available for each course. Course credit status may not be retroactively converted after the stated deadlines. Academic credit for a course is granted only if the following conditions have been met:

- 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. **Students registered as special students limited may accumulate a maximum of 16 credits total. After 16 credits have been earned, application to and acceptance in special student regular or degree status is required.**
- The student has registered to take the course for academic credit at the time of enrollment during the official registration period (June 15-18). This period will be extended to June 25 for the courses that begin on June 23, and to July 2 for courses that begin on June 30.
- The student has completed all course requirements including examinations, and has received a passing grade.

REGISTRATION, TUITION AND FEES

Space permitting, applications are accepted until the start of class. However, students are strongly encouraged to register by June 13, 2014 to ensure receiving course confirmation and to avoid cancellations. Course materials, class location and parking information are provided at final registration check-in.

Students may drop or add a course during the time period June 16-18 for courses that meet for three weeks, or by the first day of class for courses that meet for one or two weeks. After these dates it will not be possible to make registration changes. All course change requests must be submitted in writing to the Institute Office.

Participants who register for academic credit are required to pay the standard Johns Hopkins Bloomberg School of Public Health tuition rate of approximately **$987*** per credit unit.

This rate does not apply to non-credit courses. Tuition for students registered for non-credit courses is based on the number of course credit units. The non-credit tuition rate is **$475** for the equivalent of one academic credit unit.

Special Tuition Rates

The non-credit tuition rate of $475/credit rate applies to all courses **except:**

Data Analysis Workshop I	$1,974
Data Analysis Workshop II	$1,974
Advanced Data Analysis Workshop	$1,974

Concurrent enrollment in:

Principles of Epidemiology	$4,225
Statistical Reasoning I	
Statistical Reasoning II	

Full payment is requested with the application. Payments should be sent to: The Johns Hopkins Bloomberg School of Public Health, Business Office, 615 N. Wolfe Street, Suite W1101, Baltimore, MD 21205. All applications must be accompanied by payment in full, or a non-refundable $125 deposit (applied towards total tuition). Full payment must be received on or before June 13, 2014. Applications received without full payment (or deposit) will not be processed. **The Johns Hopkins Bloomberg School of Public Health accepts American Express, MasterCard, Visa and Discover.**

Registrants financed by agencies such as the World Health Organization or the federal government must submit purchase orders or contract documents with their application. Full-time Johns Hopkins University faculty, staff and eligible dependents may enroll in courses under the terms of the Hopkins Tuition Remission Program. Information on tuition remission criteria is available at *http://www.benefits.jhu.edu/tuition/remission.cfm*.

Students should contact JHSPH Student Accounts and Business Services by email at summerepi@jhsph.edu with any questions regarding billing and payments.

***The tuition rate is subject to change at the discretion of the School.**

FINAL REGISTRATION

All participants must check in at final registration to complete their registration. Final check-in sessions for Summer Institute participants will be held on June 15 and June 16, 2014 in Feinstone Hall (E2030) at the Johns Hopkins Bloomberg School of Public Health, 615 N. Wolfe Street. At final registration, students will receive course information and materials as well as finalize payment on any remaining balance of their tuition/fees. On Sunday, June 15, check-in will begin at noon and continue until 5 p.m. Transportation will be available for those staying at the dormitory. On Monday, June 16, check-in will begin at 7 a.m. **Students whose courses begin on June 23 and June 30 may check in on the first day of classes, starting at 7:30 a.m., in Room W6015.** Students who register for the one-day workshops will receive final registration information in their letter of confirmation. Johns Hopkins University is a smoke-free institution.

CANCELLATION POLICIES

The Institute reserves the right to cancel a course due to low enrollment, in which event the full enrollment fee for the course(s) will be refunded. If a course is cancelled, the applicant is notified immediately and a full refund is processed automatically unless another course is requested.

TUITION REFUND POLICIES

For information on the School's refund policy, please visit the following link: *www.jhsph.edu/studentaccts/pmt_and_refund_pol.html*. Students should contact JHSPH Student Accounts and Business Services by email at summerepi@jhsph.edu with any questions regarding refunds.

HOUSING

For students who desire housing, there is a residential facility available at the Homewood campus. Housing requests will be made on a first-come, first-served basis. **All housing reservations must be made by June 2, 2014, and be accompanied by full payment.**

Housing payments are non-refundable after June 6, 2014. Children are not permitted in the residence hall.

The Charles Commons Student Residences are located on the Johns Hopkins University Homewood Campus, a 140-acre wooded campus in a residential area of North Baltimore. Single rooms are available in air-conditioned suites with shared kitchenette and bathroom. Common space for the entire residence includes lounge areas with color televisions and VCRs, a social lounge, exercise room and coin-operated laundry.

Breakfast and dinner will be provided every day in the spacious, modern cafeteria. These housing facilities are 3.7 miles from the Bloomberg School of Public Health. Shuttle bus transportation is provided at no charge.

A blanket, pillow, linen and soap will be provided for each occupant. Linen is changed weekly. University facilities available at the Homewood campus include tennis courts and an outdoor track. Paid parking is available for the Homewood campus through the Summer Institute.

Although the Institute cannot make hotel reservations for participants, a list of area hotels and approximate prices can be found on our website at http://www.jhsph.edu/summerepi/housing/alt_housing.html.

HOUSING FEES*

Homewood Campus Residences

Room charge per person (June 15–July 4, inclusive):

- Single Room.....**$1,455***

Room charges per person for each of the one-week sessions (June 15–June 20, June 22–June 27, June 29–July 4):

- Single Room.....**$440***

Required Meal Plan (breakfast and dinner every day) is included in charges. Check-in to the dormitories is on the Sunday of each session, and check-out is by 10 a.m. on Saturday. Charges include weekend stay for participants registered for more than a one-week session.

***The housing fees listed above are subject to moderate changes.**

IMPORTANT INFORMATION FOR INTERNATIONAL STUDENTS

Participants who are not U.S. citizens or U.S. Permanent Residents must be admitted to the U.S. in the appropriate visa status. The JHMI Office of International Services (OIS) will determine the appropriate visa status for Summer Institute participants.

ACCOMODATIONS FOR PERSONS WITH DISABILITIES

The University provides appropriate, necessary and reasonable accommodations to qualified students, faculty and staff who are disabled. Please notify Ayesha Khan if you have any special needs. You may visit *www.jhsph.edu/Student_Affairs/disability* for complete information on the School's Disability Support Services, or contact the director of disability support at (410) 955-3034 or dss@jhsph.edu.

For disability access information or listening devices, please contact the Office of Support Services at (410) 955-1197 or online at *www.jhsph.edu/SupportServices*.

EQUAL OPPORTUNITY STATEMENT

The Johns Hopkins Bloomberg School of Public Health is committed to equal opportunity in its programs and does not discriminate on the basis of gender, race, national origin, age, disability, religion, sexual orientation or any other legally protected characteristic.

ADMINISTRATION

DIRECTOR

Moyses Szklo, MD, MPH, DrPH
Professor and Director
Graduate Summer Institute of Epidemiology and Biostatistics
Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

PROGRAM COORDINATOR

Ayesha Khan, MPH, MS
Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

ASSISTANT COORDINATOR

Julie Thorne
Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

ADVISORY COMMITTEE

Karen Bandeen-Roche, PhD
Professor and Chair, Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

Carlos Castillo-Salgado, MD, DrPH, JD
Professor, Department of Epidemiology,
Johns Hopkins Bloomberg School of Public Health
Special Advisor, Forum for the Public Health in the Americas,
Pan American Health Organization

David D. Celentano, ScD, MHS
Professor and Chair, Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

Stephen Gange, PhD
Professor, Department of Epidemiology
Senior Associate Dean for Academic Affairs
Johns Hopkins Bloomberg School of Public Health

Martha S. Linet, MD, MPH
Chief, Radiation Epidemiology Branch
Division of Cancer Epidemiology and Genetics
National Cancer Institute

Joseph K. McLaughlin, PhD, MPH
President, International Epidemiology Institute

Moyses Szklo, MD, MPH, DrPH
Professor and Director
Graduate Summer Institute of Epidemiology and Biostatistics
Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

FACULTY 2014

Alison Abraham, PhD, Assistant Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Lawrence Appel, PhD, Professor of Medicine, Johns Hopkins School of Medicine

Terri H. Beaty, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Natalie Blades, PhD, MS, Assistant Professor, Department of Statistics, Brigham Young University

Joel Breman, MD, DTPH, Scientist Emeritus, Fogarty International Center, NIH

Jaap Broekmans, MD, MPH, Adjunct Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Carlos Castillo-Salgado, MD, DrPH, JD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Laura Caulfield, PhD, Professor, Department of International Health, Johns Hopkins Bloomberg School of Public Health

Jason Connor, PhD, MS, Statistical Scientist, Berry Consultants

Christopher Cox, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Simon Day, Associate, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

Mara McAdams DeMarco, PhD, MS, Assistant Professor, Johns Hopkins University School of Medicine

Kay Dickersin, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Sandrah Eckel, PhD, Assistant Professor, Division of Biostatistics, Department of Preventive Medicine, University of Southern California

Mohamed Farag, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Homayoon Farzadegan, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Mary Foulkes, PhD, MPH, Associate, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

Manuel Franco MD, PhD, Associate Professor, Social and Cardiovascular Epidemiology Research Group, University de Alcalá

Jessica Franklin, PhD, Biostatistician, Division of Pharmacoepidemiology & Pharmacoeconomics, Department of Medicine, Brigham & Women's Hospital

Stephen Gange, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Thomas A. Glass, PhD, MA, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Vivian Go, PhD, MPH, Associate Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Elizabeth Golub, PhD, MPH, Associate Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public

Jonathan Golub, PhD, MPH, Associate Professor, Department of Medicine, Johns Hopkins University School of Medicine

Leon Gordis, MD, DrPH, Professor Emeritus, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Michael Griswold, PhD, Director, Center of Biostatistics, University of Mississippi Medical Center

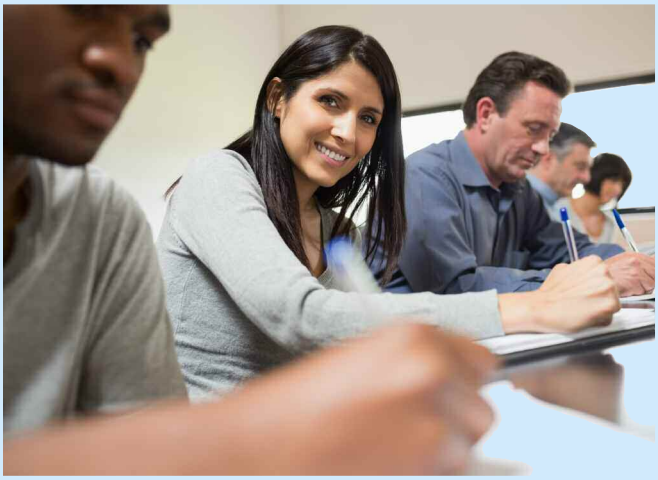
Emily Gurley, PhD, Associate Director for Science, ICDDR, Bangladesh

Joel Hill, MS, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Michel A. Ibrahim, MD, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Takera Igusa, PhD, Professor, Whiting School of Engineering, Johns Hopkins University

Lisa Jacobson, ScD, MS, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health



Andrew Jaffe, PhD, MHS, Associate, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

Xiangrong Kong, PhD, Assistant Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Tianjing Li, MD, PhD, Assistant Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Aidan McDermott, PhD, Associate Scientist, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

John McGready, PhD, MS, Associate Scientist, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

Alfredo Morabia, MD, PhD, Professor of Epidemiology, Columbia University, Mailman School of Public Health

Lechaim Naggan, PhD, Professor of Epidemiology, Ben Gurion University of the Negev

Kenrad Nelson, MD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Milo Puhan, MD, PhD, Professor of Epidemiology and Public Health, University of Zurich

Jonathan Samet, MD, MS, Professor and Chair, Department of Preventive Medicine, Keck School of Medicine, University of Southern California

Roberta W. Scherer, PhD, MS, Associate Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Alan F. Scott, PhD, Associate Professor, Genetic Resources Core Facility, Johns Hopkins University School of Medicine

Steve Selvin, PhD, Professor and Head of Biostatistics, Department of Statistics, University of California, Berkeley School of Public Health

Dave Shade, JD, Associate Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Susan Sherman, PhD, MPH, Associate Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Elizabeth Sugar, PhD, MS, Assistant Scientist, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health

Moyses Szklo, MD, MPH, DrPH, Professor and Director, Graduate Summer Institute of Epidemiology and Biostatistics, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Patrick Tarwater, PhD, Professor and Chief, Division of Biostatistics and Epidemiology, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center

Taha Taha, MBBS, PhD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Aynur Unalp-Arida, MD, PhD, MS, Associate Scientist, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Sheila Weiss, PhD, FISPE, Chief Science Officer, Druglogic

GRADUATE SUMMER INSTITUTE OF EPIDEMIOLOGY AND BIOSTATISTICS
JUNE 16–JULY 3, 2014

THREE-WEEK COURSES

June 16–July 3, 2014

MORNING

Principles of Epidemiology **340.601.11**

Lechaim Naggan

M T W Th F (S 6/21)

8:30 a.m.–Noon

This is an introductory course in epidemiologic methodology covering study design for investigation of both infectious and chronic diseases. Evaluation of screening programs and health services research will also be discussed. The laboratory problems, based on real data, will include an outbreak investigation, natural history of infectious diseases, validity of clinical tests, survival analysis, and clinical trial and etiologic studies. While there are no formal prerequisites for this course, good quantitative skills and some biologic background are strongly recommended. (5 academic credits)

TWO-WEEK COURSES

AFTERNOON

Statistical Reasoning in Public Health I and II

Natalie Blades and Jessica Franklin

M T W Th F

1:30 p.m.–5:00 p.m.

June 16–June 25 **140.611.11**

June 25–July 3 **140.612.11**

This introductory sequence is intended to provide students with a broad overview of biostatistical methods and concepts used in the public health sciences. The emphasis is on interpretation and concepts rather than calculations or mathematical details. Statistical formulas will be kept to a minimum. An objective is to provide students with an ability to read the scientific literature in order to critically evaluate study designs and methods of data analysis. Basic concepts of statistical inference including hypothesis testing, p-values and confidence intervals will be introduced. Specific topics will include comparisons of means and proportions, the normal distribution, regression and correlation, confounding, and concepts of study design including randomization, sample size and power considerations. Additional topics will include logistic regression and an overview of some methods in survival analysis. Examples of the use and abuse of statistical methods will be drawn from the current biomedical literature. (3 academic credits for each course)

ONE-WEEK COURSES

June 16–June 20, 2014

MORNING

Evolution of Epidemiologic Methods **340.673.11**

Alfredo Morabia

M T W Th F

8:30 a.m.–Noon

Examines the development of epidemiological methods and the links between epidemiology and public health. Reviews the methodologic and conceptual progress achieved from preformal epidemiologists through the evolution of "modern epidemiology" methods (study designs) and concepts (confounding, bias, interaction and causal inference). (2 academic credits)

Advanced Methods in Observational Studies: Design **340.708.11**

Elizabeth Golub and Stephen Gange

M T W Th F

8:30 a.m.–Noon

Expands beyond introductory level epidemiologic concepts and methods material, using examples from the published literature. Emphasizes interpretation and the ability to critically evaluate issues related to populations/study design and measurement including: modern cohort study designs; advanced nested designs; novel techniques for exposure assessment; interpretation and utility of measures of impact; sources of bias and methods for their prevention. (2 academic credits)

Biostatistical Analysis of Epidemiologic Data I: Logistic Regression **140.676.11**

Steve Selvin

M T W Th F

8:30 a.m.–Noon

A case study approach is used to describe and illustrate the issues surrounding intermediate statistical techniques useful in the analysis of epidemiologic and medical data. The course starts with a discussion of the 2 by 2 table, the 2 by k table and combining 2 by 2 tables. Estimation methods (principally maximum likelihood techniques) are included. These traditional analyses of tabular data are then contrasted to the application of a linear logistic model approach, which is an important and popular biostatistical tool. Logistic regression methods are then extended to explore the application to continuous data. In the context of regression analysis, key concepts such as independence, confounding and interaction are clearly defined and described. A brief description of computer applications is also included (Stata). Prerequisites: high school algebra and one semester of biostatistics and recommended: two semesters of biostatistics and a course in epidemiology. (2 academic credits)

Topics in Infectious Disease Epidemiology **340.668.11**

Kenrad Nelson

M T W Th F S (6/21)

8:30 a.m.–12:30 p.m.

This course will provide an introduction to epidemiologic methods used in infectious disease investigations. The importance of surveillance systems in detecting modern epidemics and in the development of effective disease prevention and control strategies will also be presented. An emphasis will be placed on understanding the relationships between the host, the parasite and the environment as they relate to disease causation. The course will explore contemporary epidemiologic methods applicable to old diseases that remain real or potential problems, newly emerging infectious diseases, tropical diseases and hospital infections. Selected diseases will be discussed to

clarify the role of epidemiology in understanding the pathogenesis of infectious processes in individuals and communities. Specific disease examples to be covered include sexually transmitted diseases, tuberculosis, malaria and diarrheal diseases, enteric infections, Legionnaires' disease, toxic shock syndrome, acquired immunodeficiency syndrome, and others. This course was previously offered in the Summer Institute as 340.627.11. Prerequisite: knowledge of basic epidemiology. (3 academic credits)

Pharmacoepidemiology **340.617.11**

Sheila Weiss

M T W Th F

8:30 a.m.–Noon

Pharmacoepidemiology involves application of epidemiologic methods to study uses and effects of pharmaceutical products in human populations. In addition to the identification and quantification of new adverse events and risk factors, it also includes studies of disease natural history necessary to understand drug effects and studies of drug utilization. This course will cover the development up to and including the seminal Phase 3 clinical trials for approval, the regulatory process, and the use and design of Risk Evaluation and Management (REMS) programs to mitigate known risks; identification of new risks for marketed products through active and passive surveillance programs, and the application of data mining; healthcare databases; study designs used in pharmacoepidemiology; measuring exposures; threats to validity (biases and confounding), the benefit-to-risk ratio and regulatory decision-making; and new and emerging developments in the field, including the application of meta-analysis to answer safety questions, pharmacogenomics, and FDA's Sentinel Initiative. (2 academic credits)

Social Epidemiology **340.628.11**

Manuel Franco and Thomas Glass

M T W Th F

8:30 a.m.–Noon

This one-week course will provide students with a systematic and selective overview of conceptual approaches and research findings related to the impact of social context on the health of populations. Each session will highlight a different area of research on the frontier of this emerging field. Among the social processes to be examined are social inequalities (including social class differences as well as the effects of income inequality per se), social capital and social cohesion, social networks and support, neighborhood characteristics, and race/ethnic differences. Emphasis will be placed on extending the causal chain thought to be associated with patterns of acute and chronic disease to include "upstream" factors related to social context. Includes discussion of methods related to the study of social factors across multiple levels: however this is not intended to be a methods course. The course will be taught as a seminar with limited lecture material. Basic knowledge of epidemiologic and statistical methods (including regression) is required. (2 academic credits)

Intro to Systematic Reviews and Meta-Analysis **340.686.11**

Tianjing Li and Kay Dickersin

M T W Th F

8:30 a.m.–Noon

Reviews methods used by those performing systematic reviews and meta-analysis, including building a team, formulating a research question and hypothesis, methods for searching the literature, abstracting information, and synthesizing the evidence both qualitatively and quantitatively. Covers how to formulate an answerable research question, defining inclusion and exclusion criteria, searching for the evidence, data extraction, assessing the risk of bias in the underlying studies, qualitative synthesis, meta-analysis, sensitivity analysis, and assessing meta-bias. Acquaints students with a few practicalities of conducting a systematic review using hands-on exercises. (2 academic credits)

AFTERNOON

Design and Conduct of Clinical Trials **340.613.11**

Dave Shade and Elizabeth Sugar

M T W Th F

1:30 p.m.–5:00 p.m.

Introduces clinical trial design in the context of epidemiological concepts, covers various topics in the design and conduct of clinical trials, and profiles clinical trials that illustrate these issues. Topics include the definition and history of clinical trials; trial designs, including phase III-IV, cross-over, factorial, and large, simple designs; internal and external validity; controls, randomization, and masking; ethical issues; introductions to data collection and management and analysis principles; monitoring of trials for safety and efficacy; and use of clinical trial data in healthcare decision-making. (2 academic credits)

Data Analysis Workshop I **140.613.11**

John McGready

M T W Th F

1:30 p.m.–5:00 p.m.

Intended for students with a broad understanding of biostatistical concepts used in public health sciences who seek to develop additional data analysis skills. Emphasizes concepts and illustration of concepts applying a variety of analytic techniques to public health datasets in a computer laboratory using Stata statistical software. In the first workshop (140.613), students learn basic methods of data organization/management and simple methods for data exploration, data editing, and graphical and tabular displays. Also covers basic statistical methodology including the comparison of means and proportions. Enrollment limited: students must have a laptop computer with Intercooled Stata 11 or Intercooled 12 installed. For information on purchasing Stata, please contact Ayesha Khan. (2 academic credits)

Survival Analysis **140.606.11**

Xiangrong Kong

M T W Th F

1:30 p.m.–5:00 p.m.

This introductory course presents fundamental concepts and techniques of survival analysis, including censoring, hazard and survival functions, Kaplan-Meier curves and logrank tests. Parametric inferences are introduced using the exponential and Weibull distributions. Regression analysis of the Cox proportional hazards model, and its extensions to time-dependent covariates, will also be introduced. An important focus of the course will be using data sets from clinical and epidemiological studies to illustrate the introduced statistical methods and show how to make scientific interpretations from the numerical results. SAS and Stata will be the computation softwares used in class. Students can also choose a software based on their own preference when doing exercises. Enrollment limited. Students must bring a laptop to class. (2 academic credits)

Epidemiology in Evidence-Based Policy **340.636.11**

Michel A. Ibrahim and Leon Gordis

M T W Th F

1:30 p.m.–5:00 p.m.

This course will focus on how science in general and epidemiology in particular are used to formulate and implement health and regulatory policies. The course will address several questions: How do we distinguish between good science and so called "junk science"? What are the roles of epidemiologists, other professionals—including clinicians, nurses, researchers in other fields—government, industry, and the courts? When should established expert opinions be questioned? What should be done when the available evidence is

equivocal and/or controversial? How does science fare in the legislative, regulatory, and judicial settings? What factors and processes are involved after the publication of relevant scientific papers that may support or prevent the development and implementation of appropriate health and public policy? The results of systematic reviews and meta-analyses will be discussed for several case examples such as screening recommendations for breast and prostate cancers, potential hazards of breast implants, tobacco use, general environmental health policies, and issues related to vaccine research and immunization policies. Class time will include lectures, case studies, small group discussions, exercises, and video presentations. (2 academic credits)

Complex Systems and Obesity In Human Populations **340.738.11**

Thomas Glass, Manuel Franco and Takera Igusa

M T W Th F

1:30 p.m.–5:00 p.m.

This course summarizes current knowledge on the epidemiology of obesity across the life course and in different countries. Class will review and critique major explanatory frameworks on the obesity epidemic, including cultural factors, pricing and economic factors, globalization of food production, advertising and media, and environmental determinants. Students will be introduced to systems science as tools for theory building and data analysis with emphasis on application to obesity epidemic. Characterization of the food production and delivery systems. Review potential use of agent based models for evaluation of potential policy solutions to combat obesity. Either Social Epidemiology (340.628) or Intro to Epi of Diabetes and Obesity (340.644) or equivalent elsewhere are recommended. (2 academic credits)

Introduction to Health Survey Research Methods **340.727.11**

Vivian Go and Susan Sherman

M T W Th F

1:30 p.m.–5:00 p.m.

Students learn the basics skills necessary to conduct health survey research, providing both theoretical information and experience in the field. Specifically, students learn about: qualitative methods, the use of theory in informing survey development; development of research questions; probability and non-probability sampling; power calculations; ethical issues of conducting research; and quality assurance/quality control. Hands-on exercises include the development and administration of a brief survey. (2 academic credits)

Epidemiology of HIV/AIDS* **340.649.11**

Homayoon Farzadegan

M T W Th F

5:00 p.m.–7:00 p.m. (and two noon-time seminars)

This course will deal with the epidemiology of infection with human immunodeficiency virus (HIV) and AIDS. Current knowledge of the natural history, biology, virology, epidemiology and clinical aspects of AIDS as well as treatment and vaccine clinical trials against HIV will be reviewed. Descriptive, analytic and experimental epidemiologic studies will be critically reviewed to provide a synthesis of our current understanding of the pathogenesis of this infectious disease. No prerequisites. However, an understanding of basic science concepts and biology will be assumed. Basic epidemiological principles and other quantitative skills will prove useful in understanding the distribution of the disease and in interpreting research findings. (2 academic credits)

**Online participation option available; see website for details.*

June 23–27, 2014

MORNING

Advanced Methods in Observational Studies: Inference **340.709.11**

Stephen Gange and Elizabeth Golub

M T W Th F

8:30 a.m.–Noon

Expands beyond introductory level epidemiologic concepts and methods material. Using examples from the published literature, this course will emphasizes inference, evaluation interpretation and the ability to critically evaluate issues related to comparison of populations and synthesizing inferences from observational studies including: descriptive and analytical goals for observational study inference; the counterfactual model for defining exchangeability, cause, and confounding; graphical and analytical tools for assessing causal pathways and investigating their underlying assumptions, including comparing classical and modern approaches for assessing and addressing confounding and mediation. (2 academic credits)

Biostatistical Analysis of Epidemiologic Data II: Poisson and Conditional Logistic Regression Analysis **140.677.11**

Steve Selvin

M T W Th F

8:30 a.m.–Noon

The course presents Poisson regression techniques, the primary statistical tool for the evaluation and interpretation of data consisting of counts as well as rates and probabilities. Poisson regression methods are contrasted to the more traditional analyses of mortality and incidence rates. A case/control matched pairs design is examined. A discussion of conditional logistic regression techniques, and bootstrap and randomization estimation methods are presented. A brief description of computer applications is also included (Stata). Prerequisites: high school algebra and one semester of biostatistics and recommended: two semesters of biostatistics and a course in epidemiology (2 academic credits)

Bayesian Adaptive Trials **340.676.11**

Jason Connor

M T W Th F

8:30 a.m.–Noon

This course will cover a range of Bayesian adaptive designs and the skills and considerations necessary to construct such designs. The course will begin by reviewing adaptive designs, Bayesian analysis, and Bayesian computation. Each of the next four classes will discuss one or more in a set of real-life Bayesian adaptive designs, considerations that went into each design, and the adaptive decisions that are made in each trial. We consider the operating characteristics of the Bayesian adaptive designs and the benefits and costs of interim analyses, in particular within the regulatory framework. In many cases we'll also discuss the trial results and interim decisions. (2 academic credits)

Professional Epidemiologic Methods: Topics and Methods for Health Situation Analysis **340.767.11**

Carlos Castillo-Salgado

M T W Th F

8:30 a.m.–Noon

Focuses on epidemiological methods and tools used in key health situation analyses. Includes the use of prospective epidemiological scenarios for monitoring health targets and indications. Also covers examples of health priority setting assessments; health needs assessments, and the methods for epidemiological stratification of public health problems. Laboratory exercises provide experience with applying concepts, methods and tools to problems drawn from real epidemiological data and published literature. (2 academic credits)

Applications of the Case-Control Method **340.605.11**

Mara McAdams DeMarco

M T W Th F

8:30 a.m.–Noon

Following a review of the basic strengths and problems of the case-control method, the course will examine the application of this popular method of investigation. Its use will be discussed in evaluation of risk factors, interventions, and as a surveillance tool. The course format will be based on lectures and lab work. Prerequisites: completion of basic courses in epidemiology and biostatistics. (2 academic credits)

Nutritional Epidemiology **340.650.11**

Laura Caulfield

M T W Th F

8:30 a.m.–Noon

The course will provide an introduction to the methodological issues involved in the design, conduct, analysis and interpretation of studies investigating the relationship between nutritional status, diet and disease. Emphasis will be placed on issues such as intraindividual variation, measurement of error, misclassification, correlated variables, population homogeneity, and the use of group versus individual data. The selection and use of dietary and nutritional status assessment methods appropriate for different study designs will be covered, and some experience in their use and interpretation will be provided. The impact of methodological issues, and of the type of study design, on interpretation and conclusions from research in nutrition epidemiology will be emphasized. Prerequisites: None. (2 academic credits)

Longitudinal Data Analysis **140.608.11**

Michael Griswold

M T W Th F

8:30 a.m.–Noon

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. (2 academic credits)

Perspectives on Management of Epidemiologic Studies **340.634.11**

Joel Hill

M T W Th F

8:30 a.m.– Noon

This is an introductory course addressing practical issues of management related to multi-ethnic cohort studies. The course addresses primarily longitudinal, population based studies. In both seminar and lab environment, the course involves lecture, discussion and problem solving on issues of study location, community relations, staffing a team, communication, conflict management as well as issues of quality control and recruitment and retention. Each class begins with lecture/discussion and then in the lab period students will work through real issues of management. Students are also encouraged to bring problems from their own studies or institutions to engage in problem solving. This course is complementary with "Conducting Epidemiological Research." (2 academic credits)

AFTERNOON

Molecular Biology for Genetic Epidemiology **340.665.11**

Terri Beaty and Alan F. Scott

M T W Th F

1:30 p.m.–3:00 p.m.

The manipulation and analysis of DNA samples has become fundamental to research including molecular and genetic epidemiology. This course will provide basic knowledge of commonly used recombinant DNA techniques involved in genetic epidemiology and genomics, including gene and cDNA isolation, PCR, RFLP analysis, mutational analysis, detection of polymorphisms, SNP analysis, mini- and microsatellite detection and genetic screening. (1 academic credit)

Data Analysis Workshop II **140.614.11**

John McGready

M T W Th F

1:30 p.m.–5:00 p.m.

Intended for students with a broad understanding of biostatistical concepts used in public health sciences who seek to develop additional data analysis skills. Emphasizes concepts and illustration of concepts applying a variety of analytic techniques to public health datasets in a computer laboratory using Stata statistical software. In the second workshop (140.614), students will master advanced methods of data analysis including simple linear regression and correlation, multiple linear regression, and simple and multiple logistic regression. Inclusion of linear splines and interaction terms for both linear and logistic regression modeling will also be covered. Enrollment limited: students must have a laptop computer with Intercooled Stata installed. For information on purchasing Stata, please contact Ayesha Khan. (2 academic credits)

Public Health Dimensions of Global Tuberculosis Control: New Tools and Interventions **340.681.11**

Jaap Broekmans and Jonathan Golub

M T W Th F

1:30 p.m.–5:00 p.m.

Systematically reviews the foundations of tuberculosis control in both TB high burden and industrialized countries with special emphasis on the introduction of new tools and evidence-based interventions. Critically examines new TB diagnostics (GeneXpert MTB/RIF), new TB drugs (shorter regimens for drug-sensitive and drug resistant tuberculosis), the evidence base of TB-HIV interventions and the rationale for systematic screening for active tuberculosis. Explains the rationale of the new post-2015 global TB strategy and targets. Defines the global TB disease burden and the status of the global response. Reviews the role of WHO, Global Fund to fight AIDS Tuberculosis and Malaria (GFATM), Stop TB Partnership, Bill and Melinda Gates Foundation and USAID. Case studies and concrete examples are derived from the experience in TB high burden countries (Brazil, South-Africa, Tanzania, Vietnam, Indonesia, China) and in industrialized countries (The Netherlands and USA). Students analyze and present important publications from the TB literature in the " Comstock Exercise". (2 academic credits)

Topics in Clinical Trials Management **340.671.11**

Aynur Unalp-Arida and Roberta W. Scherer

M T W Th F

1:30 p.m.–5:00 p.m.

Provides an overview of methods related to the day-to-day conduct of multicenter randomized clinical trials with an emphasis on the Coordinating Center perspective. Using case studies of multicenter clinical trials for illustration, emphasizes topics related to Good Clinical Practice, organizational models, applicable Institutional Review Board and the U.S. Food and Drug Administration regulations, methods for randomization and treatment allocation, adverse event reporting, safety and performance monitoring. Encourages discussion of methods, including alternatives to usual practice. (2 academic credits)

Methods and Applications of Cohort Studies **340.706.11**

Alison Abraham and Christopher Cox

M T W Th F

1:30 p.m.–5:00 p.m.

Topics to be discussed in the course include: definition, design and basic characteristics of cohort studies; methods for the analysis of survival data including modelling and testing of relative hazards (Cox

regression) and relative times (parametric regression); taxonomy of hazards functions for generalized gamma regression models; methods to nest case-control and case-cohort designs in cohort studies; random effects models for longitudinal data, including empirical Bayes estimates of random effects; methods for the joint analysis of longitudinal and survival data. Methods will be illustrated using data from cohort studies in which faculty have been directly involved. Prerequisite: Intermediate-level courses in both epidemiology and biostatistics and some familiarity with data analysis using software packages such as Stata. (2 academic credits)

Principles of Disease Eradication **340.801.11**

Joel Breman

M T W Th F

1:30 p.m.–5:00 p.m.

Covers characteristics of successful and unsuccessful eradication programs, since out of several disease elimination and eradication programs over the past century, only smallpox has been eradicated from humans. Focuses on essential factors – biological, epidemiological, cultural, political, economic, organizational, and leadership requirements – in considering a program for elimination or eradication. Students debate controversies in disease eradication. (2 academic credits)

Investigation of Outbreaks **340.693.11**

Taha Taha

M T W Th F

1:30 p.m.–5:00 p.m.

Students learn how to detect, investigate, and interpret disease outbreaks. Focuses on application of epidemiological skills to develop hypotheses relevant to understanding source or reservoirs of infection, modes of spread and possible control measures. Includes simple epidemiological approaches for examining field data on outbreaks and deriving inferences. Reviews the main factors involved in the occurrence of an outbreak and steps in investigating an epidemic. Uses data from large and small epidemics to illustrate the main concepts and terminology. (2 academic credits)

Advanced Issues in the Epidemiology of HIV/AIDS* **340.659.11**

Homayoon Farzadegan

M T W Th F

5:00 p.m.–7:00 p.m. (and two noon-time seminars)

Discusses the following topics at an advanced level: (1) basic science and pathogenesis of HIV/AIDS, (2) dynamics of the HIV epidemic in five continents, (3) clinical management of HIV/AIDS in developed and developing countries, (4) prevention and control modalities against HIV/AIDS, and (5) future growth of the HIV/AIDS epidemic with special reference to global economic impact of HIV vaccine and eradication issues of HIV/AIDS. Prerequisite: completion of 340.649.11. (2 academic credits)

**Online participation option available; see website for details.*

JUNE 30–JULY 3

MORNING

Professional Epidemiologic Methods: PH Surveillance **340.766.11**

Carlos Castillo-Salgado and Emily Gurley

M T W Th

8:30 a.m.–12:30 p.m.

Health surveillance is a core public health function. This course covers epidemiological methods and analyses for public health surveillance, including novel measurement approaches for "real and near real time" surveillance, syndrome surveillance and surveillance of public health events. Interpretation of analytic strategies including descriptive and inferential epidemiological methods for surveillance data presented. (2 academic credits)

Intro to R for Public Health Researchers **140.886.13**

Andrew Jaffe

M T W Th

8:30 a.m.–12:30 p.m.

Provides "hands-on" training for analyzing data in the R statistical software package, a popular open-source solution for data analysis and visualization. Covers data input/output, data management and manipulation, and constructing useful and informative graphics. Geared towards individuals who have never used R. Consists of a 90 minute "interactive" lecture followed by a 2 hour lab, where students apply the skills taught in the lecture to real data. (2 academic credits)

Non-Inferiority and Equivalence Clinical Trials **140.634.11**

Simon Day and Mary Foulkes

M T W Th

8:30 a.m.–12:30 p.m.

Presents the important differences between superiority trials and those intended to show either equivalent effect, or to show that one therapy is no worse than another (but might be better). Explores the problems of setting equivalence margins, preservation of some proportion of active control effect, and emphasizes the use of confidence intervals to interpret the results of studies. Discusses special issues of quality of the trial conduct, assay sensitivity, historical evidence of treatment effects and assumptions of constancy of treatment effects over time. Compares sample size requirements between superiority trials, equivalence trials and non-inferiority trials. Discusses the use of different analysis populations (ITT and per-protocol) and issues of changing conclusions between non-inferiority and superiority. Discusses the regulatory aspects of trial design and interpretation, and reviews existing regulatory guidance. (2 academic credits)

Biostatistical Analysis of Epidemiologic Data III: A Biostatistical Tool Box **140.678.11**

Steve Selvin

M T W Th

8:30 a.m.–12:30 p.m.

The statistical tools discussed are particularly useful for the analysis of epidemiologic and medical data. Not only are these tools described in detail, the application and interpretation are presented at a sophisticated but accessible level. Included are numerous case studies using real or realistic data to further explore the properties of at least six important biostatistical techniques. The material covered will include: non-parametric survival analysis including the Cox proportional hazard model, the analysis, application and statistical structure of disease and mortality rates, analysis of time/space clustering of disease illustrated by childhood leukemia, the analysis of tables with model (loglinear models) and model-free techniques, classification accuracy with emphasis on ROC curves, graphical methods of analysis applied to regression and prediction models and a comprehensive description of the analysis of case/control data contained in 2 by 2 and 2 by tables. Prerequisites: high school algebra, and one semester of biostatistics and recommended: two semesters of biostatistics and a course in epidemiology. (2 academic credits)

Clinical Trials: Issues and Controversies **340.635.11**

Lawrence Appel

M T W Th

8:30 a.m.–12:30 p.m.

Covers the complex issues and controversies that surround the design, analysis and interpretation of clinical trials. Topics include selection of the study population (including issues related to enrollment of minorities and women); choice of "control" and "active" treatments including use of placebos; issues pertaining to informed consent; use of intermediate (or pre-clinical) outcomes versus clinical outcomes; adaptive designs; pragmatic vs. explanatory trials; comparative effectiveness research and the role of trials; and issues related to publication and dissemination. Uses examples of published, on-going and planned studies. (2 academic credits)

AFTERNOON

Conducting Epidemiological Research **340.614.11**

Lisa Jacobson

M T W Th

1:00 p.m.–5:00 p.m.

Covers applications of epidemiologic principles in the conduct of observational studies as taught in advanced epidemiologic methods. Focuses on developing skills to conduct and manage a research protocol, monitor data collection, manage data and disseminate results. Covers components of a clinical research team, responsibilities, expertise and tasks study members perform, and organizational, logistical and attitudinal issues that need to be addressed in producing an effective research group. Topics include infrastructure needed for single-site and multi-site studies, selection bias and analytical intent in the determination of populations and methods for recruitment, development of a manual of operations and forms for data collection and administration, data management tools, implementation and review of quality assurance, specimen repository tracking, and useful statistics for evaluating the progress of the study. Prerequisite: intermediate level courses in both epidemiology and biostatistics. (2 academic credits)

Introduction to the SAS Statistical Package **140.605.11**

Aidan McDermott

M T W Th

1:00 p.m.–5:00 p.m.

Through this course, the student will become an adept user of the SAS statistical package, mastering the skills needed for effective data management, data manipulation and data analysis. The student will learn how to document work, and how to make the work replicable. Graphical techniques for displaying data will be discussed. While this course will use the SAS statistical package exclusively, much of the technical knowledge and some of the computing techniques will be applicable to any statistical package. No prerequisites. (2 academic credits)

Advanced Global TB Control: Achieving Impact **340.691.11**

Jaap Broekmans and Jonathan Golub

M T W Th

1:00 p.m.–5:00 p.m.

Examines the operational and programmatic implications of scaling up: evidence based TB-HIV interventions, in particular intensified case finding, infection control and isoniazid preventive chemotherapy; evidence based X/MDR-TB services and evidence-based public-private TB collaborative activities. Examines the challenge of TB elimination in industrialized countries. Assesses the epidemiological impact in national TB control programs of these new tools and interventions.

Multilevel Models **140.607.11**

Sandrah Eckel

M T W Th

1:00 p.m.–5:00 p.m.

This course will give an overview of "multilevel statistical models" and their application in public health and biomedical research. Multilevel models are regression models in which the predictor and outcome variables can occur at multiple levels of aggegration: for example, at the personal, family, neighborhood, community and regional levels. They are used to ask questions about the influence of factors at different levels and about their interactions. Multilevel models also account for clustering of outcomes and measurement error in the predictor variables. In this course, we will focus on the main ideas and on examples of multi-level models from public health research. Students will learn to formulate their substantive questions in terms of a multilevel model, to fit multilevel models using Stata during laboratory sessions and to interpret the results. Previous experience with regression analysis is required. (2 academic credits)

Advanced Data Analysis Workshop **140.620.11**

Patrick Tarwater

M T W Th

1:00 p.m.–5:00 p.m.

Covers methods for the organization, management, exploration, and statistical inference from data derived from multivariable regression models, including linear, logistic, Poisson and Cox regression models. Students apply these concepts to two or three public health data sets in a computer laboratory setting using STATA statistical software. Topics covered include generalized linear models, product-limit (Kaplan-Meier) estimation, Cox proportional hazards model. This course follows in natural succession to Data Analysis Workshops I and II. Enrollment limited; students must have a laptop computer with STATA installed. (2 academic credits)

ONE-DAY WORKSHOPS

Saturday, June 21

Methods for Clinical and Translational Research* **340.725.11**

Jonathan Samet

8:30 a.m.–5:00 p.m.

This course provides an overview of the methods of translational research. Emphasizes developing skills in the interpretation and application of reports of findings of translational research. Topics include hypotheses and study design, types of data, bioinformatics and statistical analyses, and evidence synthesis methods. (1 academic credit)

**Online participation option available; see website for details.*

Saturday, June 28

Critical Reading of the Epidemiologic Literature* **340.658.11**

Moyses Szklo

8:30 a.m.–5:00 p.m.

In this one-day workshop, students will develop skills in critical reading of epidemiological reports. Students will read several articles in advance of the course and prepare critiques. During the course, a blend of lectures and discussions will be used to cover epidemiologic concepts relevant to writing and reviewing reports of epidemiologic research. (1 academic credit)

**Online participation option available; see website for details.*

TWO-DAY WORKSHOP

Monday, June 30–Tuesday, July 1

Comparative Effectiveness Research: Outcome Measurement **340.674.11**

Milo Puhan

8:30 a.m.–5:00 p.m.

Addresses key aspects of comparative effectiveness research. Introduces students to the measurement, selection and interpretation of outcomes for comparative effectiveness research. Explores types of benefit and harm outcomes important in clinical trials (e.g. events, patient-reported outcomes, composite outcomes) and introduces students to quantitative benefit harm assessments. (2 academic credits)

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH
GRADUATE SUMMER INSTITUTE OF EPIDEMIOLOGY AND BIOSTATISTICS
APPLICATION FORM

PERSONAL INFORMATION (Please print)

☐ Mr. ☐ Ms. ☐ Dr.

Name: _____
FIRST MIDDLE INITIAL LAST GENDER (M OR F)

Occupation: _____ Title: _____

Office Address: _____
STREET CITY STATE ZIP

Home Address: _____
STREET CITY STATE ZIP

Work Phone: _____ Home Phone: _____ Fax: _____
AREA CODE/NUMBER AREA CODE/NUMBER AREA CODE/NUMBER

Indicate your preferred mailing address: ☐ Home ☐ Office

Country of Citizenship: _____ Country of Legal Residence: _____ Email: _____

Social Security Number: _____ Date of Birth: _____
REQUIRED REQUIRED

PROFESSIONAL EXPERIENCE (Three most recent, starting with current)

EMPLOYER POSITION/TITLE ACTIVITIES DATES

1. _____
2. _____
3. _____

EDUCATIONAL BACKGROUND (Start with most recent university/college degree)

SCHOOL AREA OF CONCENTRATION DEGREE YEAR RECEIVED

1. _____
2. _____
3. _____

JHU AFFILIATION (Please check all that apply)

☐ Employee ☐ Attended Continuing Education Course/Institute ☐ Alumnus/Alumna

Are you currently enrolled in a degree program at the Johns Hopkins University? ☐ Yes ☐ No

If yes, department and degree: _____

Are you currently an MPH candidate at the Johns Hopkins Bloomberg School of Public Health? ☐ Yes ☐ No

Are you currently a DrPH candidate at the Johns Hopkins Bloomberg School of Public Health? ☐ Yes ☐ No

Have you ever previously participated in the Johns Hopkins Graduate Summer Institute of Epidemiology and Biostatistics? ☐ Yes ☐ No Years: _____

How did your hear about our program? ☐ Brochure ☐ Internet ☐ Colleague Other: _____

Full payment is requested with the application. All applications must be accompanied by payment in full, or a non-refundable $125 deposit (to be applied towards total tuition). Applications received without full payment (or deposit) will not be processed. For information concerning the program, please contact the Coordinator, Ayesha Khan, by telephone at (410) 955-7158, by fax at (443) 287-8757, or by email at summerepi@jhsph.edu. Visit our website at www.jhsph.edu/summerepi.
Summer Institute Office: W6508, 615 N. Wolfe Street, Baltimore, MD 21205. ***If you have any special needs, please let us know.***

Continued on back

APPLICATION FORM (CONTINUED)

Please complete and mail with payment to: Johns Hopkins Bloomberg School of Public Health, Business Office, 615 North Wolfe Street, W1101, Baltimore, MD 21205. Checks should be made payable to Johns Hopkins University. It must be indicated on the application whether or not courses are to be taken for academic credit. Please review the class schedule to make sure you have not selected courses that meet at the same time.

PLEASE INCLUDE:

Tuition Payment $ _____

Housing Payment (if applicable) $ _____

Deposit (if applicable) $ _____

Total Enclosed $ _____

CREDIT DESIRED:

☐ Academic Credit

☐ Non-Credit

PAYMENT METHOD:

☐ Check *(payable to: Johns Hopkins University)*

☐ American Express ☐ Discover ☐ MasterCard ☐ Visa

CARD NUMBER

EXPIRATION DATE

CARD VERIFICATION CODE

CARDHOLDER'S NAME (AS IT APPEARS ON THE CARD)

CARDHOLDER'S ADDRESS (IF DIFFERENT FROM PARTICIPANT)

CITY STATE ZIP

SIGNATURE DATE

COURSE SCHEDULE *(please check your selections)*

THREE-WEEK COURSES

Morning Schedule 8:30 a.m.–Noon

☐ Principles of Epidemiology (June 16–July 3 / M T W Th F, S 6/21)

TWO-WEEK COURSES

Afternoon Schedule 1:30 p.m.–5 p.m.

☐ Statistical Reasoning in Public Health I (June 16–June 25 / M T W Th F)

☐ Statistical Reasoning in Public Health II (June 25–July 3 / M T W Th F)

ONE-WEEK COURSES

June 16–June 20 (M T W Th F)

☐ Evolution of Epidemiologic Methods (8:30 a.m.–Noon)

☐ Advanced Methods in Observational Studies: Design (8:30 a.m.–Noon)

☐ Biostatistical Analysis of Epidemiologic Data I: Logistic Regression (8:30 a.m.–Noon)

☐ Topics in Infectious Disease Epidemiology (S 6/21) (8:30 a.m.–12:30 p.m.)

☐ Pharmacoepidemiology (8:30 a.m.–Noon)

☐ Social Epidemiology (8:30 a.m.–Noon)

☐ Introduction to Systematic Reviews and Meta-Analysis (8:30 a.m.–Noon)

☐ Design and Conduct of Clinical Trials (1:30 p.m.–5 p.m.)

☐ Data Analysis Workshop I (1:30 p.m.–5 p.m.)

☐ Survival Analysis (1:30 p.m.–5 p.m.)

☐ Epidemiology in Evidence-Based Policy (1:30 p.m.–5 p.m.)

☐ Complex Systems and Obesity in Human Populations (1:30 p.m.–5 p.m.)

☐ Introduction to Health Survey Research Methods (1:30 p.m.–5 p.m.)

☐ Epidemiology of HIV/AIDS (5 p.m.–7 p.m. and two noon-time seminars)

June 23–June 27 (M T W Th F)

☐ Advanced Methods in Observational Studies: Inference (8:30 a.m.–Noon)

☐ Biostatistical Analysis of Epidemiologic Data II: Poisson and Conditional Logistic Regression (8:30 a.m.–Noon)

☐ Bayesian Adaptive Trials (8:30 a.m.–Noon)

☐ Professional Epidemiologic Methods: Topics and Methods for Health Situation Analysis (8:30 a.m.–Noon)

☐ Applications of the Case-Control Method (8:30 a.m.–Noon)

☐ Nutritional Epidemiology (8:30 a.m.–Noon)

☐ Longitudinal Data Analysis (8:30 a.m.–Noon)

☐ Perspectives on Management of Epidemiologic Studies (8:30 a.m.– Noon)

☐ Molecular Biology for Genetic Epidemiology (1:30 p.m.–3 p.m.)

☐ Data Analysis Workshop II (1:30 p.m.–5 p.m.)

☐ Public Health Dimensions of Global Tuberculosis Control (1:30 p.m.–5 p.m.)

☐ Topics in Clinical Trials Management (1:30 p.m.–5 p.m.)

☐ Methods and Applications of Cohort Studies (1:30 p.m.–5 p.m.)

☐ Principles of Disease Eradication (1:30 p.m.–5 p.m.)

☐ Investigation of Outbreaks (1:30 p.m.–5 p.m.)

☐ Advanced Issues in the Epidemiology of HIV/AIDS (5 p.m.–7 p.m. and two noon-time seminars)

June 30–July 3 (M T W Th)

☐ Professional Epidemiologic Methods: Surveillance (8:30 a.m.–12:30 p.m.)

☐ Introduction to R for Public Health Researchers (8:30 a.m.–12:30 p.m.)

☐ Non-Inferiority and Equivalence Clinical Trials (8:30 a.m.–12:30 p.m.)

☐ Biostatistical Analysis of Epidemiologic Data III (8:30 a.m.–12:30 p.m.)

☐ Clinical Trials: Issues and Controversies (8:30–12:30 p.m.)

☐ Introduction to the SAS Statistical Package (1:00 p.m.–5 p.m.)

☐ Advanced Global TB Control: Achieving Impact (1:00 p.m.–5 p.m.)

☐ Multilevel Models (1:00 p.m.–5 p.m.)

☐ Advanced Data Analysis Workshop (1:00 p.m.–5 p.m.)

☐ Conducting Epidemiological Research (1:00 p.m.–5 p.m.)

ONE DAY WORKSHOP (8:30 a.m.–5 p.m.)

Saturday, June 21

☐ Methods for Clinical and Translational Research

Saturday, June 28

☐ Critical Reading of the Epidemiologic Literature

TWO DAY WORKSHOP (8:30 a.m.–5 p.m.)

Monday, June 30–Tuesday, July 1

☐ Comparative Effectiveness Research: Outcome Measurement

HOUSING APPLICATION *(Please check):*

☐ Female ☐ Male I would like to share a suite with: _____
NAME OF PERSON

☐ June 15–July 4, 2014 ☐ June 15–June 20, 2014 ☐ June 22–June 27, 2014 ☐ June 29–July 4, 2014

☐ I will make my own housing arrangements ☐ Please send list of hotels

I hereby certify that the information given by me is complete and accurate in every respect, and I understand that any misrepresentation or omission may be cause for denial of registration or revocation of academic credit. While attending the Summer Institute, I will adhere to all rules and regulations applicable to the School of Public Health students, including but not limited to the Student Conduct Code and Student Academic Ethics Code.

Signature of Applicant: _____ Date: _____