



American College of Epidemiology (ACE) Preconference Workshops

June 15, 2004 • Grand America Hotel • Salt Lake City, UT

— Workshop registration is separate from meeting registration —

Name _____
first middle last degree
Institution _____
Address _____
City _____ State _____ Zip _____
Daytime Telephone _____ Fax _____ Email _____

Workshop Registration

Morning: 9:00 am-12 noon; Afternoon: 1:00 pm-5:00 pm

- Workshop 1: Molecular Genetics for Epidemiologists: From the Basics to More Advanced Topics (full day OR half day)**
Faculty: Jack A. Taylor, M.D., Ph.D., Chief, Molecular and Genetic Epidemiology Section, Laboratory of Molecular Carcinogenesis and Senior Investigator, Epidemiology Branch, NIEHS, NIH
- Full Day
 Half Day - morning
 Half Day - afternoon
- Workshop 2: Multilevel Analysis in Public Health (full day)** Faculty: Ronald B. Harrist Ph.D. Associate Professor of Biometry, School of Public Health, University of Texas Health Science Center at Houston; Kay T. Kimball, Ph.D. Statistical Design and Analysis, Austin, Texas
- Workshop 3: An Introduction to Bayesian Methods in Epidemiology (full day)** Faculty: Dalene Stangl, ScD. Professor and Director, Institute of Statistics and Decision Sciences Duke University
- Workshop 4: Applying Quantitative Sensitivity Analysis to Epidemiologic Data (full day OR half day)** Faculty: Timothy Lash, Department of Epidemiology, Boston University SPH
- Full Day
 Half Day - morning
 Half Day - afternoon
- Workshop 5: Field Epidemiology – Practical Aspects (half day)**
Faculty: Joel Hill, Johns Hopkins Bloomberg School of Public Health
- Workshop 6: Teaching the Teacher: Essential Tools for Analyzing Large Public Health Data Sets (half day)** Faculty: Rob Weinzimer, CDC and selected analysts at the National Center for Health Statistics, selected faculty from Schools of Public Health

Registration Fees

Full Day Workshop	Before May 25	After May 25	
Member of ACE or SER	\$160	\$210	\$ _____
Non-Member	\$220	\$270	\$ _____
Student*	\$110	\$160	\$ _____

Half-Day Workshop (one only — a.m. or p.m.)	Before May 25	After May 25	
Member of ACE or SER	\$100	\$150	\$ _____
Non-Member	\$160	\$210	\$ _____
Student*	\$70	\$120	\$ _____

Total Enclosed: \$ _____

*Proof of student status is required
Registrations received after May 25, 2003 will be processed on-site.

Special Services

- Please check if you require special accommodations to fully participate. Attach a written description.

Payment Information

Check or credit card information must be received with the workshop registration form.

- Check (US currency, payable to American College of Epidemiology)
 Master Card Visa American Express

Authorized Cardholder (please print) _____
Signature _____
Card Number _____ Exp. Date _____

Please mail or fax this form with payment to:

American College of Epidemiology
1500 Sunday Drive, Suite 102
Raleigh, North Carolina 27607
Fax: (919) 787-4916

Please either fax OR mail registration form. Do not fax AND mail registration form!

Do not mail or fax to the SER office.

Questions?

Phone: (919) 861-5573
Website: www.acepidemiology.org
E-mail: info@acepidemiology.org

For descriptions of each workshop, please see the reverse side of this form.

Workshop Descriptions

Workshop 1: Molecular Genetics for Epidemiologists: From the Basics to More Advanced Topics

Faculty: Jack A. Taylor, M.D., Ph.D., Chief, Molecular and Genetic Epidemiology Section, Laboratory of Molecular Carcinogenesis and Senior Investigator, Epidemiology Branch, NIEHS, NIH

This will be a two-part workshop. The morning will consist of a review of molecular genetics designed to provide a background in the techniques of DNA analysis for epidemiologists. The workshop will provide a basic background for those who wish a more clear understanding of concepts and techniques used in molecular epidemiology, and a basis from which to move on to the afternoon course on advanced topics.

The afternoon will be an extension of the morning workshop and will cover selected advanced and emerging areas of genetics and genomics. The course will focus initially on topics related to DNA polymorphism, mutation and DNA repair, and discuss application of these issues to the study of disease etiology with a focus on cancer. DNA chips, expression arrays, and other technologies have gathered considerable interest within the epidemiology community, although they have seldom been applied in epidemiology studies. The course will provide the epidemiologist with a conceptual understanding of these technologies and the current limitations on their application. Finally, the workshop will try to anticipate near and intermediate-term applications of emerging genomic technologies on epidemiology studies, and suggest practical aspects of tissue procurement and storage, and consent.

Goals of this workshop:

1. Review selected technical topics of DNA of interest to the epidemiologist including, polymorphism discovery, spontaneous and induced mutation, DNA repair, DNA as a lifetime dosimeter of exposure
2. Describe the basis of emerging technologies for genetic analysis including DNA chips, expression arrays, and mass spectroscopy
3. Discuss how such technologies and the field of genomics may be applied in epidemiology studies and tissue sample requirements

Workshop 2: Multilevel Analysis in Public Health

Faculty: Ronald B. Harrist Ph.D. Associate Professor of Biometry, School of Public Health, University of Texas Health Science Center at Houston; Kay T. Kimball, Ph.D. Statistical Design and Analysis, Austin, Texas

Multilevel analysis has emerged as a powerful new statistical tool with many applications in public health and epidemiology. This workshop will (1) review the rationale for the use of multilevel analysis in epidemiological studies ; (2) summarize fundamental concepts of multilevel statistical models, including models for continuous and dichotomous outcomes, and explain similarities and differences of multilevel models and other regression models; and (3) provide examples of applications of multilevel models involving individuals nested within groups and repeated measures nested within individuals. The use of two different software packages will also be briefly illustrated. Although previous understanding of basic linear and logistic regression analysis will be assumed, no previous experience with multilevel analysis is necessary. The workshop will emphasize fundamental issues, concepts, interpretation, and application rather than mathematical derivations.

Goals of this workshop:

1. Understand the basic concepts of multilevel analysis
2. Understand the situations in which multilevel models are useful, and how these models differ from standard epidemiologic approaches
3. Understand the strengths and limitations of multilevel analysis in public health and epidemiology
4. Understand the basics of fitting multilevel models and interpreting key results using available software

Workshop 3: An Introduction to Bayesian Methods in Epidemiology

Faculty: Dalene Stangl, ScD. Professor and Director, Institute of Statistics and Decision Sciences Duke University

This 1-day course will introduce the Bayesian paradigm of statistics from an applied perspective. This means that Bayesian ideas will be taught through presentation of examples from clinical and community trials, epidemiology, and health policy. This course is designed for persons who use statistics in their applied work.

It will be designed for people who would like to read the book "Bayesian Biostatistics" edited by Berry and Stangl, but who have not yet had enough exposure to Bayesian ideas to be able to do so. It assumes no previous knowledge of Bayesian theory or methods. Attendees need only be familiar with the concept of a probability distribution and enthusiastic about examining statistics from a different perspective.

Goals of this workshop:

1. Distinguish the conceptual differences between the Bayesian and Classical/Frequentist paradigms of statistics.
2. Explain Bayes Theorem and examine each of the components of a Bayesian model, including priors, likelihoods, posteriors, predictive distributions, and utilities.
3. Introduce approaches to the elicitation of prior distributions.
4. Teach how to calculate posterior and predictive distributions for simple conjugate distributions, and demonstrate techniques for calculating posterior and predictive distributions for more complex cases.
5. Present examples of published epidemiological research that use Bayesian methods.
6. Demonstrate software useful for Bayesian analysis and explain how to gain access to this software.

Workshop 4: Applying Quantitative Sensitivity Analysis to Epidemiologic Data

Faculty: Timothy Lash, Department of Epidemiology, Boston University SPH

This workshop is designed for epidemiologists familiar with threats to validity (selection bias, misclassification, and confounding), basic algebra, and statistical computing.

Observational epidemiologic studies yield estimates of effect that differ from the true effect because of random error and systematic error. Epidemiologists design studies and analyses to minimize both sources of error. When presenting results, epidemiologists use statistics to quantify the impact of random error on estimates of effect, but only qualitatively describe residual systematic error (uncontrolled bias). Sensitivity analysis provides one method of quantifying residual systematic error. Participants in this workshop will learn how to use simple and probabilistic sensitivity analyses to account for systematic as well as random error in their estimates of effect.

The interactive workshop will present topics that address the objectives described below. After each segment, participants will interactively solve problems in a notebook that illustrate the preceding segment's objective. All of the presentation materials and the problems will be provided in the notebook, as will a bibliography of primary literature citations to the methods literature. Participants should bring a scientific calculator. Participants who attend with a laptop computer and an installed version of SAS 8.0 (including the IML component) will be able to implement the SAS code at the workshop. All participants will be able to follow the SAS implementation and will receive a copy of the SAS code and example data set on a floppy disk.

Participants should expect to gain new skills, as the emphasis of the workshop will be on the implementation and conduct of sensitivity analysis, rather than statistical theory.

Goals of this workshop:

Participants who complete the workshop will be able to:

1. Describe methods to estimate systematic error in observational data and compare the advantages and disadvantages of these methods.
2. Quantify error arising from selection bias — or from misclassification of exposure, disease, or a covariate — using simple sensitivity analysis.
3. Calculate bounds on the relative risk due to confounding arising from an unmeasured confounder.
4. Implement probabilistic methods of sensitivity analysis that (a) impute data to calculate a distribution of estimates of effect, or (b) apply bias parameters to the original estimates of effect.

5. Compare the similarities, differences, advantages and disadvantages of the two aforementioned methods of Monte Carlo sensitivity analysis.
6. Use bootstrapping in combination with the imputation method to obtain a distribution of estimates of effect that quantifies both random and systematic error.
7. Implement provided SAS software, in conjunction with a sample data set, to accomplish both methods of probabilistic sensitivity analysis.

Workshop 5: Field Epidemiology – Practical Aspects

Faculty: Joel Hill, Johns Hopkins Bloomberg School of Public Health

Goals of this workshop:

To provide participants with an understanding of the administrative management and oversight required to implement an epidemiologic study in the field. Topics to be discussed include leadership, quality assurance manuals, training programs, recruitment/retention issues, and community development

Outline:

- A. Organizing for Work
 1. Goals: To develop the working organization for implementation of the study in the field
 - a. Leadership
 - b. Field Center Space/Staff
 - c. Quality assurance Activities
- B. Recruitment/Retention of cohort
 1. Goals: to gain understanding of the recruitment process, what is involved, who should be doing it and when to start.
 - a. Community Development
 - b. Longitudinal Studies
 - c. Vulnerable Populations
- C. Quality Control
 1. Goals: To look at some quality control mechanisms, to determine what is best for a specific study.
 - a. Training
 - b. Certification and Follow-up

[not yet confirmed]

Workshop 6: Teaching the Teacher: Essential Tools for Analyzing Large Public Health Data Sets

Faculty: Rob Weinzimer, CDC and selected analysts at the National Center for Health Statistics, selected faculty from Schools of Public Health

This workshop is designed for graduate school faculty in departments of epidemiology and others responsible for curriculum development at schools of epidemiology.

This half-day workshop is designed to introduce methods and materials for potential use in teaching the use of large public health data sets to graduate level students in schools of epidemiology. Examples will come from data sets of CDC's National Center for Health Statistics. The workshop will begin with an overview of NCHS data sets, including survey design, content, and examples of analyses of the data. Workshop faculty will discuss their proposed approach of developing prototype "modules" for teaching selected topical areas, that can be applied to classroom use. Proposed modules will present an analytic "question of interest," identify an NCHS data set(s) for use in addressing the question, describe appropriate analytic tools for answering the question, and describe steps to arrive at a solution(s). Modules will include, as appropriate, consideration of issues of sampling, weighting, and appropriate statistical software for analysis with specific data sets. This is designed to be an interactive workshop, and participants are expected to discuss strengths and weaknesses of the proposed modules and their potential application for use in their classroom.

Goals of this workshop:

Upon completion, participants will be able to:

1. Identify major data systems of NCHS and describe data collection methods and survey content
2. Describe examples of analytic uses of data sets
3. Understand the complexities of data sets and assess appropriate statistical methods for analysis of data
4. Understand how to use selected modules for presenting teaching topics
5. Identify applications for use in their classrooms