

Advanced Epidemiologic Methods

Date

Monday, July 13 through Friday, July 17, 2010
9:00-17:00

Venue

Charité-Universitätsmedizin Berlin
Campus Virchow Klinikum
Forum 3 – Lehrgebäude
Augustenburger Platz 1
13353 Berlin

Audience

Public Health Professionals and Epidemiologists familiar with advanced epidemiologic knowledge, basic algebra, and statistical computing

Language

English

ECTS

3

Course fees

360,00 € for students
450,00 € other participants

Course reader

Rothman KJ, Greenland S, Lash TL. *Modern Epidemiology*. 3rd Edition. Lippincott-Raven, Philadelphia, 2008

Information

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Further information about BSPH:

<http://bsph.charite.de>

Prof. Dr. Timothy Lash

Professor of Cancer Epidemiology, University of Aarhus, Department of Clinical Epidemiology, Aarhus University Hospital



Dr. Lash is Professor of Cancer Epidemiology at the University of Aarhus, Department of Clinical Epidemiology, Aarhus University Hospital. He is also Associate Professor of Epidemiology at the Boston University School of Public Health. He is author and editor of the major textbook *Modern Epidemiology*, and the recipient of several awards for excellence in teaching and research. Dr. Lash's current research centers on the etiology and treatment of breast cancer. He also works on methods aimed at quantifying bias and uncertainty arising from systematic error in observational studies and has recently published *Applying Quantitative Bias Analysis to Epidemiologic Data*. His consulting work focuses on interpreting the results of epidemiologic investigations, and applying these interpretations to environmental and occupational exposures.

BSPH Summer School

Advanced Epidemiologic Methods

Berlin School of Public Health
at the Charité

13.07.2010 to 17.07.2010

Charité – Universitätsmedizin Berlin
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Lehrgebäude
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Beteiligte Institutionen:



Course Objectives

A broad range of epidemiologic topics will be covered to strengthen the methodological skills of participants. Selected course objectives are to:

- Use the sufficient cause model, counterfactual susceptibility type model, and a causal graph to assist with the design or analysis of an epidemiologic study
- Calculate adjusted measures of effect and select those that, when collapsible, correspond to the no-confounding condition. Use the adjusted measures of effect to estimate the direction and magnitude of confounding.
- Distinguish effect measure modification, interdependence, and statistical interaction from one another as separate — but related — concepts of interaction.
- Weigh the advantages and disadvantages of significance testing.
- Compare the advantages and disadvantages of frequentist and Bayesian approaches to analysis of a single study, to evidence, and to changing your mind.

Course outline

Date	Content
July 13 morning	Three models of causation: sufficient cause model, counterfactual model, causal graphs
July 13 afternoon	Confounding (definition derived from counterfactual model) and confounders (definition and disconnect between confounders and confounding). Pooling and standardization
July 14 morning	Advanced methods to address confounding: causal graphs, propensity scores, marginal structural models, instrumental variables
July 14 afternoon	Concepts of interaction: effect measure modification, causal interdependence and its connection with the counterfactual model, statistical interaction
July 15 morning	Misclassification: emphasis on corrections for misclassification and exceptions to the rule that misclassification biases toward the null
July 15 afternoon	Probability distributions for epidemiologic data (binomial, poisson, hypergeometric, extension to logistic regression and survival analysis). Introduction to p-values

Course outline

Date	Content
July 16 morning	p-values, p-value functions, confidence intervals, likelihoods
July 16 afternoon	Bayesians versus Frequentists
July 17 morning	Dose- response analysis and multiple comparisons
July 17 afternoon	Bias analysis and causal inference

Venue Map

