

Observational Epidemiological Studies: Advanced Methods for Data Analysis

Description

This course will introduce innovative methods for exposure-response analyses and control of confounding in observational epidemiological research. The following topics will be covered:

- regression analyses with generalized linear models (glm)
- use of smoothing and splines in generalized additive models (gam)
- Poisson time series analysis
- confounding and effect modification incl. directed acyclic graphs (DAG)
- inverse probability weighting.
- the concept of instrumental variables

We will work with the software R.

Objectives

By the end of this course, participants will be able to perform quantitative analyses of epidemiological data from observational studies dealing with a broad spectrum of research questions. In particular, students will learn how to analyze complex exposure-response patterns and know modern ways of thinking about confounding.

Dates

Mon 23 – Fri 27 June 2014

Eligibility

This is an advanced statistical course. The course is aimed at researchers with an in-depth interest in applied data analysis. Participants should know the principals of linear and logistic regression modelling. Practical experience with linear regression analysis is required. Participants should be familiar with the statistical software R (for an introduction see SSPH+ course "[Introduction to the Statistical Software R](#)" by Jan Hattendorf in 25-26 February 2014)

Course Structure

The course consists of plenary lectures by Prof. Joel Schwarz and computer exercises. Students should bring their own laptop for the practical work. On an optional basis, students are offered the opportunity to discuss their own research questions and analytical problems with the lectures, tutors and fellow students during one afternoon.

PhD Program Management:

Academic Lead Prof. Charlotte Braun-Fahrländer
Program Coordination Dr. Sina Henrichs

Contact:

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Assessment	Active participation in the exercises, short presentation in workshops (optional) and a formal exam.								
Credits	<p>2 ECTS</p> <p>Prelim. Work, 5 h; Contact time, 40 h; Homework/Wrap-Up Work: 15 h</p> <p>1 ECTS corresponds to approx. 30 hours' work</p>								
Facilitators	<p>Professor Joel Schwarz, Harvard School of Public Health, United States of America</p> <p>Professor Martin Rössli, Swiss Tropical and Public Health Institute, Switzerland</p>								
Location	Swiss Tropical and Public Health Institute, University of Basel, Socinstrasse 57, 4002 CH-Basel, Room will be announced								
Course Fees	<table border="0"> <tr> <td>SSPH+ PhD Students</td> <td>0.—</td> </tr> <tr> <td>External MD/PhD Students</td> <td>600.—</td> </tr> <tr> <td>External Academics</td> <td>1700.—</td> </tr> <tr> <td>Others</td> <td>2500.—</td> </tr> </table> <p>(The cost scheme depends on the Number of ECTS. Per ECTS participants are asked to pay 300,- CHF, 850,- CHF or 1250,-CHF, respectively)</p>	SSPH+ PhD Students	0.—	External MD/PhD Students	600.—	External Academics	1700.—	Others	2500.—
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Registration	Please register online on our Homepage or send an Email to phdph@ssphplus.ch								
Deadline	23 May 2014								
Max. Attendance	<p>20</p> <p>(preference is given to SSPH+ PhD Students)</p>								



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