



# PhD Program in Public Health

Course Title:

## Observational epidemiological studies: advanced methods for design and analysis

### Description

The course consists of plenary lectures by Prof. Joel Schwarz and computer exercises. The following topics will be covered: Innovative study designs in observational epidemiology (case-cross-over, time series, case-only studies, panel studies etc.), regression analyses, dose-response modeling, dealing with confounding and effect modification, the concept of instrumental variables. An introduction into the software R will be provided, but Stata software can be used as well. The course consists of daily plenary lectures in the morning followed by a computer lab of at least 2h (using R or STATA). Examples will be drawn from a variety of research fields. 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 the second part of the afternoon. To accommodate better the needs and interests of the students, they are asked to provide a short description of their area of research and their specific analytical or study design questions. Students should bring their own laptops and dataset for the optional part of the course.

### Objectives

By the end of this course, participants (PhD candidates in the area of Public Health and Epidemiology) will be able to perform quantitative analyses of epidemiological data from observational studies dealing with a broad spectrum of research questions.

### Dates

Monday 31 August – Friday 4 September 2009

### Eligibility

PhD candidates in Public Health & Epidemiology performing quantitative analyses of epidemiological data from observational studies

### Course structure

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:15-10:30	<b>Lecture 1:</b> innovative study designs I: time-series studies, panel studies	Introduction into R statistical software II	Discussion practical 2 <b>Lecture 3:</b> Principles of exposure-response regression analysis	<b>Lecture 4:</b> Confounding and effect modification:	<b>Lecture 5:</b> Principles of instrumental variables
Coffee					
10:45-12:30	Introduction into R statistical software I	Discussion of Practical 1 <b>Lecture 2:</b> innovative study designs II: case-crossover studies and case only studies	<b>Practical 3:</b> exposure-response analyses	<b>Practical 4:</b> dealing with confounding	<b>Practical 5:</b> instrumental variables Discussion of practical 5
Lunch					
13:30-15:00	<b>Practical 1:</b> time series analysis	<b>Practical 2:</b> case-crossover analysis and case only studies	Discussion of practical 3	Discussion of practical 4	Discussion, open issues Course evaluation Exam
Coffee					
15:15-17:00	Workshop I	Workshop II	Workshop III	Workshop IV	Exam cont.

### Assessment

Active participation in the exercises, short presentation in workshops (optional) and a formal exam.

### Credits

2 ECTS

### Facilitators

Prof. Joel Schwarz, Harvard School of Public Health, United States of America  
Prof. Martin Rössli, Institute of Social & Preventive Medicine at Swiss Tropical Institute Basel, Switzerland  
Prof. Charlotte Braun-Fahrlander and Prof. Nino Künzli, Institute of Social & Preventive Medicine at Swiss Tropical Institute Basel, Switzerland (Associated Institute of the University of Basel)

### Location

University of Basel (exact location: Schulungsraum S14, Spalenvorstadt 14, 4003 Basel)

### Course fee

PhD in Public Health candidates registered with SSPH+ register free of charge, Other students: CHF 850.--, Other academics: CHF 1150.--.

### Registration

As the number of participants is limited to 12, early registration online is advised. At the time of registration please also send a short description of your area of research and any specific analytical or study design questions to : [martin.roosli@unibas.ch](mailto:martin.roosli@unibas.ch)

### DEADLINE

10 July 2009

## PhD Program Management :

Academic director: Prof. Charlotte Braun-Fahrlander  
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