

Epidemiological Data Analysis: Advanced Methods for Exposure-Response Modeling

Description

The following topics will be covered: regression analyses with generalized linear models (glm), modeling of non-linear exposure-response associations using generalized additive models (gam), splines, dealing with confounding and effect modification and inverse probability weighting. We will also deal with innovative study designs in observational epidemiology such as Poisson time series analysis, case-only studies or case-cross-over studies.

We will work with the software R. An introduction into this software will be provided in the first morning for those who are not familiar with it. In this respect it is highly recommended to visit the SSPH+ course "Introduction to the Statistical Software R" organized by Jan Hattendorf. The course consists of daily plenary lectures followed by a practical. 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 one afternoon. Students should bring their own laptop for the practical work.

Basic requirement for course participation is good knowledge of regression modeling including practical experiences with data analysis.

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. In particular, students will learn how to analyze complex exposure-response patterns.

Dates

11 – 15 June, 2012

Eligibility

Advanced students and researchers.

PhD Program Management:

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

Contact:

Address Swiss Tropical and Public Health Institute
Socinstrasse 57, CH-4002 Basel, Switzerland
Telephone +41 61 284 83 03
Email phdph@ssphplus.ch
Website www.ispm-unibas.ch/ssphplus

Course Structure

Schedule:

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:15-10:30	Introduction into R statistical software I	<u>Practical 1:</u> discussion	<u>Practical 2:</u> discussion <u>Practical 3:</u> splines in GAM models	<u>Practical 4:</u> cont. <u>Practical 4:</u> discussion	Reporting of workshop discussion
Coffee					
10:45-12:30	Introduction into R statistical software II	Lecture 2: Principles of exposure-response regression analysis	<u>Practical 3:</u> splines in GAM models <u>Practical 3:</u> discussion	<u>Practical 4:</u> discussion Lecture 4: distributed lag models	Lecture 6: case-crossover studies and case only studies
Lunch					
13:30-15:00	Lecture 1: Introduction into glm models	Lecture 2 cont.	Lecture 3: time series studies	Lecture 5: inverse probability weighting	Discussion, open issues Course evaluation Exam
Coffee					
15:15-17:00	<u>Practical 1:</u> GLM models in R	<u>Practical 2:</u> exposure-response and smoothing in R	<u>Practical 4:</u> time series studies	Workshop in 4 groups	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, USA
Prof. Martin Rössli, Swiss Tropical and Public Health Institute

Location

Basel

Course Fees

SSPH+ Students	0.—
Other PhD students	600.—
Other academics	1700.—

PhD Program Management:

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

Contact:

Address

Telephone

Email

Website

Swiss Tropical and Public Health Institute
Socinstrasse 57, CH-4002 Basel, Switzerland
+41 61 284 83 03
phdph@ssphplus.ch
www.ispm-unibas.ch/ssphplus



PhD Program Public Health



	Others	2500. —
Registration	Please register online on our homepage	
Deadline	Please register by 1st of May 2012	

PhD Program Management:

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

Contact:

Address

Telephone
Email
Website

Swiss Tropical and Public Health Institute
Socinstrasse 57, CH-4002 Basel, Switzerland
+41 61 284 83 03
phdph@ssphplus.ch
www.ispm-unibasel.ch/ssphplus