Swiss Epidemiology Winter School 2019

Causal Inference in Observational Epidemiology

January 21st – 23rd, 2019

Faculty	**Prof. Miguel Hernan** Harvard T.H. Chan School of Public Health, Boston, USA **Prof. Marcel Zwahlen** Institute of Social and Preventive Medicine (ISPM), University of Bern, Switzerland
Venue	**CH – 3823 Wengen | SWITZERLAND** Hotel Jungfraublick (see map on http://www.epi-winterschool.org/hotels)
Description	Causal inference from observational data is a key task of epidemiology and of allied disciplines such as behavioural sciences and health services research. Commonly used statistical methods estimate association measures which cannot always be causally interpreted, even when all potential confounders are included in the analysis. In contrast, a causally explicit approach formally defines causal effects, identifies the conditions required to estimate causal effects without bias, and uses analytical methods that, under those conditions, provides estimates that can be endowed with a causal interpretation. This course presents such framework for causal inference from observational data and recent methodological developments, with a special emphasis on complex longitudinal data. The application of these methods will be illustrated using data from a synthetic HIV cohort study. The course is aimed at epidemiologists, statisticians, and other researchers who work with longitudinal observational data.
Objectives	By the end of this short course participants will have • An in-depth understanding of confounding and selection bias • An understanding of the role and potential of different methodological approaches to overcome these problems, including inverse probability weighting, marginal structural models and nested structural models • Done practical data analyses implementing these methods using Stata®software.

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Target audience	The course is aimed at epidemiologists, statisticians, and other researchers who work with longitudinal observational data. Stata® will be used for the computer practical sessions, and so familiarity with the package is desirable, although code and solutions will be provided.
Outline	The course will run over three days and consist of lectures, group work and computer practical sessions. We start early in the morning with a review of the previous day. During the extended break in the afternoon participants review course materials, catch up on emails or go skiing. We reconvene at 4:30 pm for the computer sessions. ***Monday, January 21st (8:00 – 12:00 | 16:30 – 18:30)*** ***Tuesday, January 22nd (8:00 – 12:00 | 16:30 – 18:30)*** ***Wednesday, January 23rd (8:00 – 12:00 | 16:30 – 18:30)***
Credits	1.0 ECTS
To bring along	Students should bring their own portable computers. A course license for Stata® will be available, to be installed before arrival. University of Bern IT staff onsite can provide help upon request per e-mail (it@ispm.unibe.ch)
Course book	https://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/
Course fee	SSPH+ students: CHF 0 *) Academic: CHF 900 Industry: CHF 2000 *) except students from University of Geneva (cohort 4) and Lucerne
Registration	You can register on the Winter School website www.epi-winterschool.org.
Accomodation	Participants must book their accommodations themselves. Please see our recommendations on www.epi-winterschool.org/hotels for special prices.

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