Swiss Epidemiology Winter School 2023

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UNIVERSITÄT
BERN

Causal Inference in Observational Epidemiology
16–18 January 2023

Faculty	**Prof. Miguel Hernan** Harvard T.H. Chan School of Public Health, Boston, USA **Prof. Marcel Zwahlen** Institute of Social and Preventive Medicine, University of Bern, Switzerland
Venue	**CH – 3823 Wengen | SWITZERLAND** Hotel Jungfraublick (map)
Course 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.
Course 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® or R software.

Course 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.
Course outline	The course runs over three days and consists of lectures, group work, and computer practical sessions.
	We start early in the morning by reviewing the previous day. During the extended afternoon break, participants review course materials, catch up on email, or ski. We reconvene at 4:30 pm for the computer sessions.

Monday, 16 January   *8:00 am – 12:00 pm | 4:30 pm – 6:30 pm*
Tuesday, 17 January   *8:00 am – 12:00 pm | 4:30 pm – 6:30 pm*
Wednesday, 18 January   *8:00 am – 12:00 pm | 1:00 pm – 3:00 pm*

Credits	1.0 ECTS
Course materials	Bring a portable computer. A temporary course license for Stata® will be available to install before arrival.
	Onsite University of Bern IT staff provides support upon e-mail (it@ispm.unibe.ch) request.
Course book	The course book—*Causal Inference: What If* (2020)—by M.A. Hernán and J.M. Robins is available now as a PDF.
Course fee	PhD Bern Students: CHF 350
	PhD Students: CHF 700
	Academic: CHF 900
	Industry: CHF 2000
Registration	Register on the Winter School website. Pre-Registration starts 29 August 2022 at 12:00 pm (CET).
Accomodation	Book your accommodation separately. Please see recommendations for special prices.