Swiss Epidemiology Winter School 2017

Mendelian randomization in public health, biomarker and pharmacotherapeutic investigation

January 16th – 18th, 2017

Course description

Faculty	**Prof. George Davey Smith (course co-ordinator)** **Prof. Caroline Relton** **Dr. Rebecca Richmond** MRC Integrative Epidemiology Unit, University of Bristol
Place	**CH – 3823 Wengen | SWITZERLAND** Hotel Bühlstube (see map on http://www.epi-winterschool.org/hotels)
Introduction	Mendelian randomization is a statistical approach that uses genetic variants as instrumental variables (proxies) to test the causal effect of a (non-genetic) risk factor. Since its introduction in 2003 it has increasingly be used to determine causal effects in observational epidemiology. The application of the approach is expanding rapidly following the availability of genetic data. The course will provide an introduction to the conduct, assumptions, strengths and limitations of Mendelian randomization. Applications to validating pharmacotherapeutic will be covered. The course will include lectures, critical appraisal of published studies and practical analysis exercises. This course is aimed at epidemiologists, biostatisticians and other health researchers. It is intended for anyone who wishes to understand Mendelian randomization studies or undertake Mendelian randomization analyses. It is a beginners/introductory course. Stata® (basic level) will be used for some of the computer practical sessions.

Contact:
University of Bern | Institute of Social and Preventive Medicine
Finkenhubelweg 11
3012 Bern | Switzerland
www.epi-winterschool.org | winterschool@ispm.unibe.ch

Course objectives	• To provide an introduction to the principles and assumptions of instrumental variables analysis • To understand the properties of genetic variants that make them suitable for use as instrumental variables • To understand the strengths and limitations of Mendelian randomization for strengthening causal inference in epidemiology • To be able to complete straightforward instrumental variable analysis and correctly interpret the results • To gain an introduction to the critical appraisal of published Mendelian randomization studies Through computer practical sessions using Stata® and online MR tools, participants will learn how to apply the statistical methods introduced in the course to realistic datasets.
What you have to bring	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 on Sunday night.
Outline of course	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 5 pm for the computer sessions. ***Monday, January 16th (8:30 – 12:00 | 17:00 – 19:00)*** ***Tuesday, January 17th (8:30 – 12:00 | 17:00 – 19:00)*** ***Wednesday, January 18th (8:30 – 12:00 | 17:00 – 19:00)***
Credit	1.5 ECTS
Course book	There is no course book but a reading list will be circulated in advance of the course
Course fee	SSPH+: CHF 0.00 Academic: CHF 950 Industry: CHF 2050
Registration	You can register on the Winter School website www.epi-winterschool.org.
Course hotels	Participants not staying in the group house should book their accommodation themselves (see map and recommendations on www.epi-winterschool.org/hotels).