UNIVERSITÉ DE GENÈVE
FACULTÉ DE MÉDECINE
Institut de santé globale

SSPH+
SWISS SCHOOL OF PUBLIC HEALTH +

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UNIVERSITÄT BERN

Epidemiology A.B.C. –
where Advanced and Basic epidemiology Convene

January 22-24, 2015

Faculty
– Professor Emiliano Albanese, MD, PhD, MPH - Department of Psychiatry and Institute of Global Health, School of Medicine, University of Geneva.
– Professor Antoine Flahault - Institute of Global Health, School of Medicine, University of Geneva

Place
Hotel Falken, Wengen (see map)

Introduction
Epidemiology is the cornerstone of public health and mastering basic epidemiological concepts is essential for conducting good research in this field. We will use *ex cathedra* lectures and case studies to illustrate and exemplify the basic theory and the key concepts of epidemiological methods, study designs, measurements and statistics. Moreover, basic epidemiology will be linked up to the topics covered in the other courses offered in Wengen to facilitate the interaction of participants with others and let them take full advantage of the exceptionally stimulating atmosphere of the Winter School (http://www.epi-winterschool.org/).

This course is primarily conceived for those who are starting a PhD program in the field of public and global health and who may have limited training and education in epidemiology, or are willing to refresh their epidemiological skills. However, clinicians, health workers, researchers and scientists who would like to acquire an initial, formal training in basic epidemiology in a very stimulating environment are more than welcome too.

Course Objectives
By the end of this course participants should be able to:
• Define epidemiology and its scopes and be familiar with its terminology
• Understand the strengths and weaknesses of study designs in epidemiology and their uses
• Use basic statistical methods to describe variables and summarize data in tabular and graphical formats
• Understand and graphically represent the concepts of confounding and mediation
• Understand the concepts of causality and causal inference
• Identify potential sources of bias in epidemiological studies

What you have to bring

Participants will need to bring their personal laptop (Win or MAC), and make sure to have their Office package installed; STATA will also be installed and used for some basic analysis.

Outline of Course

This is a 3-day course. We'll use the exact same format of all other courses. This includes a long break (from 12h to 17h) during which participants can interact including skiing together (and talk about epidemiology while on the *télésiège*) :

Morning sessions (3 hours and 30 min, from 8h30 to 12h) will cover the basic concepts and knowledge in epidemiology using mainly frontal lectures and short practical sessions.

Afternoon sessions (2 hours, from 17h to 19h) will be dedicated to the 'Hot Topics' (see below). These are practical examples and case studies of actual applications, challenges and potential issues in practical epidemiology. The objective of these afternoon sessions is to provide the opportunity to link basic epidemiology to advanced epidemiology and to favor participants' interaction with others in Wengen.

Morning sessions – **BASIC EPIDEMIOLOGY (frontal and practical)**

DAY 1 (Thursday, 8:30-12:00)

- What is epidemiology?

- Epidemiology as a tool for public and global health.

- Study designs

DAY 2 (Friday, 8:30-12:00)

- Measurement and psychometrics

- Summarizing data

- Basic statistical methods in epidemiology

DAY 3 (Saturday, 8:30-12:00))

- Measures of association

- The concept of causality

- Chance, bias and confounding

Afternoon sessions - **HOT TOPICS in EPIDEMIOLOGY**

DAY 1 (Thursday, 17:00-19:00)

- Case study I "The **dystilbene case story"**. Linked to :

  → Indirect Comparisons and Network Meta-Analysis: Evidence Synthesis with Multiple Treatments

DAY 2 (Friday, 17:00-19:00)

- Case study II "**Obesity & dementia : evidence against the odds**". Linked to:

  → Statistical Analysis with Missing Data Using Multiple Imputation and Inverse Probability Weighting

DAY 3 (Saturday, 13:00-15:00)

- Critical discussion "**From philosophy to genes and back: Inference & Causation**". Linked to :

  → Applied Bayesian Statistics in Medical Research

  → Epigenetic Epidemiology

  → Causal Inference in Observational Epidemiology

Credit

1.5 ECTS

Maximum number of participants

12

Registration

Registration by mail to <u>winterschool@ispm.unibe.ch</u>

Course Hotels

Participants have to book their accommodation themselves (see map and recommendation on www.epi-winterschool.org/hotels).