

Swiss Epidemiology Winter School 2025



Applied Bayesian Statistics in Medical Research 23 - 25 January 2025

Faculty	Simon Wandel, PhD Global Group Head Biostatistics, Cardio-Renal-Metabolic Development Unit, Novartis Pharma AG, Basel Prof. Marcel Zwahlen Institute of Social and Preventive Medicine, University of Bern, Switzerland
Venue	CH – 3823 Wengen SWITZERLAND Hotel Edelweiss (map)
Course description	The Bayesian approach to medical research offers a powerful framework allowing for the incorporation of externally available information. Although Bayesian statistics is sometimes perceived and discussed as controversial, this course is not about controversies, but about pragmatic ways of integrating available information in a coherent way in analyses of epidemiological and clinical studies. The course builds on a principled probabilistic approach and applied problems and exercises. It is aimed at epidemiologists, statisticians and others who wish to use Bayesian approaches. Participants should have a good understanding of basic statistical and epidemiological principles and be able to interpret parameters and results from standard data analyses.
Course objectives	By the end of this short course participants will <ul style="list-style-type: none">• Understanding the role of Bayesian statistics in clinical research and health-care evaluation• Receiving an introduction to computational tools for Bayesian analysis• Understanding challenges and dangers of naïve use of Bayesian methods• Have the basis for a unified statistical approach that allows approaching problems of analysis and design in a structured way

Course audience	The course is aimed at epidemiologists, statisticians, and other researchers who want to get familiar with a coherent probability based approach of analysing data, evaluating evidence and making predictions for future data. Familiarity with R (https://www.r-project.org/) would be helpful as R and additional software will be used for the computer practical sessions. Code and solutions to the practicals will be provided.
Course outline	<p>The course runs over three days and consists of lectures and computer practical sessions.</p> <p>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.</p> <p><i>Thursday, 23 January</i> <i>8:00 am – 12:00 pm 4:30 pm – 6:30 pm</i></p> <p><i>Friday, 24 January</i> <i>8:00 am – 12:00 pm 4:30 pm – 6:30 pm</i></p> <p><i>Saturday, 25 January</i> <i>8:00 am – 12:00 pm 1:00 pm – 3:00 pm</i></p>
Credits	1.0 ECTS
Course materials	<p>Students will bring their own portable computers. Prior to the course, we will provide instructions regarding the installation of the software packages to be used in the course. These are R (http://www.r-project.org/) and JAGS (http://mcmc-jags.sourceforge.net/) which are both freeware. JAGS (Just Another Gibbs Sampler) is a cross-platform engine for the BUGS language with distributions for Mac OS X, Windows, and Linux.</p> <p>Onsite University of Bern IT staff provides support upon e-mail (it.ispm@unibe.ch) request.</p>
Course fee	<p>PhD Bern Students: CHF 600</p> <p>PhD Students: CHF 800</p> <p>Academic: CHF 1000</p> <p>Industry: CHF 2000</p>
Registration	Register on the Winter School website . Pre-Registration starts 26 August 2024 at 12:00 pm (CET) until 1 September 2024.
Accommodation	Book your accommodation separately. Please see recommendations for special prices .