

Published: March 2016

Short courses at SACEMA

Annette Gerritsen - Epidemiologist at Epi Result.

In the coming months two short courses will be organised under the auspices of SACEMA: Bayesian Biostatistics from 4-8 April 2016 (registration deadline: 17 March 2016) and Using quantitative bias analysis with epidemiologic data from 18-20 May 2016 (early bird registration deadline: 1 April 2016).

Bayesian Biostatistics

In the last two decades the Bayesian approach has become increasingly popular in virtually all application areas. The approach is especially known for its capability to tackle complex statistical modelling tasks. The aim of this course is to introduce the participants smoothly into Bayesian statistical methods, from basic concepts to hierarchical models, model building and model testing. Numerous biostatistical examples (e.g. meta-analyses, longitudinal studies including growth curve modelling, analysis of clinical trials, etc) illustrate the theoretical concepts. The course is scheduled into classroom teaching and computer exercises, and uses the software packages WinBUGS, OpenBUGS, JAGS and but also their interfaces with R making use of R2WinBUGS, R2OpenBUGS and rjags.

Prof. Emmanuel Lesaffre of the Leuven Biostatistics and Statistical Bioinformatics Centre (L-BioStat), Catholic University of Leuven, Belgium, will be presenting this intensive five-day course and it is based on a recently published Wiley book of Lesaffre and Lawson, entitled Bayesian Biostatistics. Each participant will receive a copy of this book, included in the course fee.

The course assumes a good knowledge of regression techniques (linear, logistic, etc.) and some knowledge of models for correlated data. Experience with R is beneficial though not essential; however programming skills are required for the course.

The course will take place from 9 am to 4 pm daily at the Stellenbosch Institute for Advanced Study (STIAS). The total course fee, including book, refreshments, lunches and social events is R8000. Of this, R1200 is a non-returnable registration fee. For international participants, the course fee is 700 Euros. Of this, 110 Euros is a non-returnable registration fee. Accommodation, breakfast and dinner is not included in the course fee, but accommodation packages may be negotiated

through SACEMA. Closing date for registration: 17 March 2016.

Registration should be done online via the SACEMA website. Enquiries may be directed to the SACEMA Research Manager, Ms Lynnemore Scheepers (email: scheepersl@sun.ac.za).

Using quantitative bias analysis with epidemiologic data

Students of epidemiology are well versed in ways to reduce systematic error (bias) in the design of their studies and to describe random error in the analysis of their studies through confidence intervals and p values. However students are rarely taught methodologies for quantifying systematic error in their studies. Quantitative bias analysis (QBA) provides a methodology for assessing the impact of bias on study results by making assumptions about the bias parameters. QBA allows for assessment of both the direction and magnitude of systematic error and gives an estimate of effect (or a series of estimates of effect) that would have occurred had the bias been absent, assuming the bias parameters are correct. Such analyses allow investigators to go beyond speculation about the bias in discussion section of manuscripts and can be a powerful tool for quantifying the impact of such biases.

Dr Matthew Fox of the Department of Epidemiology and the Center for Global Health and Development at Boston University will be presenting an intensive three-day course which is based on a book co-authored by Dr. Fox. The workshop will cover simple and multidimensional bias analysis methods that can be used to gain a better understanding of the impact of unmeasured confounding, selection bias and misclassification (measurement error) on study results. These methods can be applied to nearly any dataset, even summary data presented in the literature. Such approaches lay the foundation for more complicated methods, but by themselves, they act as if the bias parameters are known with certainty. We will then continue with probabilistic bias analysis which requires specification of probability distributions about the bias parameters and then uses Monte Carlo simulations methods to create intervals accounting for the uncertainty in the systematic error. Finally we will finish with methods for combining the systematic error to create simulation intervals that account for the

total error (systematic and random) in the study results.

The course will take place from 9 am to 4 pm daily, 18-20 May 2016, in the STIAS Library, adjacent to SACEMA. The fee, including refreshments, lunches and social events, is R4500 for early bird registration by 1 April 2016, and R5500 for later registration. Of this, R850 is a non-returnable registration fee. For international participants, the course fee is 500 Euros for early bird registration, and 550 Euros for late registration. Of this, 90 Euros is a non-returnable registration fee. Accommodation, breakfast and dinner is not

included in the course fee, but information about accommodation packages may be obtained from SACEMA.

Registration should be done online via the SACEMA website. Enquiries may be directed to the SACEMA Research Manager, Ms Lynnemore Scheepers (email: scheepersl@sun.ac.za) and copy to Matthew Fox (email: mfox@bu.edu).

Annette Gerritsen - Epidemiologist at Epi Result.
Areas of interest: research methodology, infectious diseases epidemiology, migration and health.
annette.gerritsen@epiresult.com