



Biostatistics Short Course on Advanced Multilevel Modelling

The Developing Excellence in Leadership, Training and Science (DELTAS) Africa, Sub-Saharan Africa Consortium for Advanced Biostatistics Training (SSACAB), in conjunction with two of its partners institutions: Biostatistics Unit of the South African Medical Research Council (SAMRC), South Africa and the School of Mathematics, Statistics, and Computer Science, University of KwaZulu-Natal, South Africa are pleased to announce 3-day Advanced Multilevel Modelling in Biostatistics (MMB) Course

Course Facilitators:

Professor Samuel Manda: Biostatistics Unit, South Medical Research Council, Pretoria, South Africa.

Professors Henry Mwambi and Temesgen Zewotir: School of Mathematics, Statistics, and Computer Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa

Dr Tarylee Reddy; Biostatistics Unit, South Medical Research Council, Pretoria, South Africa.

Venue: School of Mathematics, Statistics, and Computer Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa

Date: 16-18 November, 2017.

Course Description:

This course will focus on the theoretical fundamentals of multilevel modelling, covering essential methodological and statistical issues. Applied understanding of multilevel modelling will be discussed with empirical examples. The theoretical fundamentals of multilevel modelling will be taught by generalizations of linear models to analyses of hierarchically clustered data structure. These data structures include, for example, pupils in classrooms and classrooms in schools and schools in school districts or repeated measurements of patients in longitudinal study and longitudinal studies in health facilities. The nested structure of these data may pose both statistical challenges in that the usual assumption of independence of observations in classical techniques may not hold; thus may require methods beyond multiple regression.

Topics to be covered will include approaches to analysing nested data structures, partitioning variance into within– and between-group components, cross-level interactions, maximum likelihood (ML) estimation and restricted maximum likelihood (REML) estimation, generalised estimation equations (GEE) estimation, model diagnostics, prediction, missing data and longitudinal data structures and non-nested data

The short course assumes a high level of proficiency in multiple linear regression (to at least a 2-level linear model) and a good level of expertise in at least one statistical software package (e.g., SPSS, Stata, SAS, R, etc.). Participants are encouraged to bring own laptops, preferably with STATA and SAS installed. There is a general understanding that lack of the required prerequisites may adversely impact a participant's learning outcomes from the course

Intended audience:

This course is designed for Masters' and PhD students or researchers who already have a basic knowledge of regression analysis at a (mathematical/statistical) bachelor level degree. A maximum of 40 participants will be allowed in this course

Course Fees:

Attendance at this course is free. However, to meet the costs of break refreshments and lunches, a modest fee of ZAR500.00 will be required and payable on registration. Please also note: Participants will be responsible for their own travel and accommodation arrangements.

Further details: Please contact Professor Samuel Manda samuel.manda@mrc.ac.za or Professor Henry Mwambi (mwambih@ukzn.ac.za).

Course Registration: To register for the course, please send your full details (Name and contact details: Telephone or cell, email and your home institution) to Miss Christel Barnard (BarnardC@ukzn.ac.za). For logistical purposes please let this information be given to Miss Christel Barnard by no later than 12 noon on 16 October 2017. Thank you in advance.

Accommodation Venues: Please indicate to Miss Christel Barnard if you need information about places where you can book accommodation within a convenient distance from the venue. Note that accommodation will be booked and paid for by the participant.