Course title:	**SC08 - Applied Meta-Analysis Using R**
Duration:	**1 day**
Date and time:	**15 July**
Venue:	**Faculté de Médecine et de Pharmacie de Marrakech** **Address: Sidi Abbad, Marrakech 40000**
Registration fee:	- **Developed Country: € 240** - **Host , Least Developed & Developing Country, or Student[(1)]: € 150** (1) For students, proof of enrolment will be required.

Instructor 1
Din Chen, Wallace H. Kuralt Distinguished Professor, University of North Carolina at Chapel Hill, USA

Dr Din Chen is now the Kuralt Distinguished Professor from the University of North Carolina at Chapel Hill. He is also an extraordinary professor at the Department of Statistics, University of Pretoria, South Africa. Dr. Chen was a professor in Biostatistics at the University of Rochester and the Karl Peace endowed eminent scholar chair in biostatistics from the Jiann-Ping Hsu College of Public Health at the Georgia Southern University. He has published more than 150 papers and co-authored/edited 12 books on biostatistics, interval-censored survival data analysis, meta-analysis, and statistical methods for big-data sciences. He is an elected fellow of the American Statistical Association and elected member of ISI.

Instructor 2
Samuel Manda, Chief Specialist and Professor of Biostatistics, South African Medical Research Council, South Africa

Professor **Samuel Manda** is a Chief Specialist Statistician and Manager of the Pretoria Regional Biostatistics Unit of the South African Medical Research Council. He holds a PhD in Bayesian Statistics from the University of Waikato in New Zealand. He has previously been in Auckland, New Zealand, and in Leeds, United Kingdom. He has published widely with over 70 publications, most of which are first authored publications and book chapters and over 30 presentations at national and international invited sessions. These outputs cover multivariate spatial models, clustered survival data analysis; meta-analysis, and health statistics. Professor Manda holds a number of Honorary Professorship Positions at a number of universities.

COURSE DESCRIPTION

This workshop is based on Dr Din Chen's book: "Applied Meta-Analysis Using R (2013)" published by Chapman and Hall/CRC co-authored with Dr Karl E. Peace. This workshop provides a most up-to-date development and a thorough presentation of meta-analysis models for clinical trial and biomedical applications with detailed step-by-step illustrations and implementation using R. The examples are compiled from real medical and clinical trial literatures and the analyses are illustrated by a step-by-step fashion using the most appropriate R packages and functions which should enable attendees to follow the logic and gain an understanding of the meta-analysis methods and R implementation so that they may use R to analyse their own data.

SYLLABUS

Morning session 1:
- Introduction to R so participants do not need to know the R
- Overview to meta-analysis for both fixed-effects and random-effects models in meta-analysis. Real datasets in public health are introduced along with two commonly used R packages of "meta" and "rmeta"

Morning Session 2:
- Meta-analysis models for binary data, such as for risk-ratio, risk difference and odds-ratio
- Meta-analysis models for continuous data, such as for mean difference and standardized mean difference

Afternoon Session 3:
- Methods to quantify heterogeneity and test the significance of heterogeneity among studies in a meta-analysis and then introduce meta-regression with R package of "metafor".
- Meta-analysis methods for individual-patient data(IPD) analysis and meta-analysis (MA) with summary statistics

Afternoon Session 4:
- Meta-analysis methods for rare-events which is timely for clinical trials of adverse-events.
- Multivariate meta-analysis and other relevant topics in meta-analysis.

TARGET AUDIENCE

This workshop is targeted to researchers who are interest in
- Learning the fixed-effects and random-effects meta-analysis techniques
- Learning the meta-regression
- Doing their own meta-analysis in their own research area so they are encouraged to bring their own data into this workshop
- Teaching meta-analysis to their Ph.D and master-level students