Course title:	**SC17 - Practical Bayes for Beginners**
Duration:	**2 days**
Date and time:	**13 & 14 July**
Venue:	**Faculté de Médecine et de Pharmacie de Marrakech** **Address: Sidi Abbad, Marrakech 40000**
Registration fee:	- **Developed Country: € 370** - **Host , Least Developed & Developing Country, or Student(1): € 240** (1) For students, proof of enrolment will be required.

Instructor

Kerrie Mengersen, Professor, Queensland University of Technology, Australia

Kerrie Mengersen has held a Chair in Statistics at Queensland University of Technology (QUT) for over 15 years. She is one of Australia's most prominent Bayesian statisticians, is currently an Australian Research Council (ARC) Laureate Fellow (2015-2020), and is the Deputy Director of the ARC Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS) in Big Data, Big Models, and New Insights. Kerrie is an Accredited Member of the Statistical Society of Australia (2001) and Society President, a long-time executive member of the International Society for Bayesian Analysis, an elected Fellow of the Royal Statistical Society (2004) and an elected Fellow of the Institute for Mathematical Sciences (2005). She has over 200 refereed journal publications and sustains a Bayesian Research and Applications Group (BRAG) comprising postgraduate students and early career researchers working on a variety of methodological and applied problems in health, environment and industry.

COURSE DESCRIPTION

Bayesian modelling and data analysis are becoming a standard part of the statistical toolkit. Its appeal includes the availability of hierarchical models for better describing complex systems, the use of priors to describe uncertainty and include external information in the analysis, and the direct probabilistic interpretation of the results.

While simple Bayesian models can be analysed analytically, most analysis is via Monte Carlo methods such as Markov chain Monte Carlo (MCMC). There is a great range of MCMC algorithms available now for Bayesian computation.

This two-day course introduces the practicing statistician to Bayesian analysis. The course is strongly practical, with emphasis on understanding the fundamental concepts, modelling in a Bayesian context, using MCMC and 'doing' Bayesian analysis via the software package R.

SYLLABUS

The following topics will be covered:

- What is Bayesian Statistics
- Priors, models & results
- Common MCMC algorithms
- Model fit & model choice
- Role & formulation of priors
- Examples of different types of models
- Reporting of Bayesian analysis results, with examples from published literature

TARGET AUDIENCE

This course is introductory, and it assumes some knowledge of statistics but no knowledge of Bayesian or MCMC approaches.

Aimed at practicing statisticians wanting to learn and apply the fundamentals of Bayesian analysis or researchers in other disciplines (particularly with an environmental or ecological background) with a statistical knowledge equivalent to 2 years of undergraduate study.