

SACNASP CONTINUING PROFESSIONAL DEVELOPMENT (CPD) WORKSHOP
(1 CDP POINT)



THE SOUTH AFRICAN STATISTICAL ASSOCIATION *BAYES SPECIAL INTEREST GROUP*
HAS ORGANISED A 1-DAY WORKSHOP

TITLE:	Use Of Informative Priors In Confirmatory Studies, With Hands-On Session In R
WHERE:	2022 South African Statistical Association Annual Conference (Both <i>In-Person</i> & <i>Hybrid</i> option available)
WHEN:	28 November 2022
WHO SHOULD ATTEND?	Industry Researchers (statisticians as well as domain experts) both from the health sector and otherwise, academics and students interested in applied Bayesian methods
LEARNING OUTCOMES	An Understanding of case-studies from industry applications; How to traverse the bridge between theoretical knowledge and implementable Bayesian models; How to use certain R Packages for your own research projects.
REGISTRATION🔗:	https://App.Glueup.Com/Event/Sasa-2022-52197/Workshops.Html

DETAILS:

Use of informative priors in confirmatory studies, along with a hands-on session in R
(Presenter: Dr Rajat Mukherjee, Alira Health)

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Address by ISBA President (Prof Sudipto Banerjee, UCLA)

This workshop in Bayesian statistics is aimed to provide industry researchers (statisticians as well as domain experts), academicians and students working in medicine and healthcare with an introduction to the topic along with some specific examples and use cases from the pharmaceutical industry. The workshop will focus on translating historical data, for example, from previously conducted randomized clinical trials into informative priors for the parameters of interest which can then be used in the design and analysis of future trials. This approach of \sim Bayesian-Borrowing is gaining interest particularly for investigations in rare diseases and for medical devices. We will discuss a common problem of Prior-Data conflict in this setting and methodologies to control borrowing from historical data in the presence of a conflict. We will also be discussing a recently conducted trial COVID vaccine trial that was conducted in the Bayesian framework. The workshop will conclude with a hands-on session implementing a Bayesian design using the open-source R software. Participants are encouraged to install R and the following packages on their laptops prior to attending the workshop: *ggplot2*, *RBest*, *parallel*, *mcmc*, *mvtnorm*, *rstan*, *rstanarm*.

Workshop Outline:

- Introduction to Bayesian Thinking
- Constructing informative prior for different endpoint types: continuous, binary, survival
- Problem of Prior-Data Conflict and how it can be accounted for in a Bayesian dynamic-borrowing methodologies

- Establishing the frequentist operating characteristics (type-I and power) for a Bayesian design - why and how
- Case studies in medical devices, rare diseases and COVID vaccine development
- Practical session using R.