Meta-Analysis Workshop
University of Southern Queensland
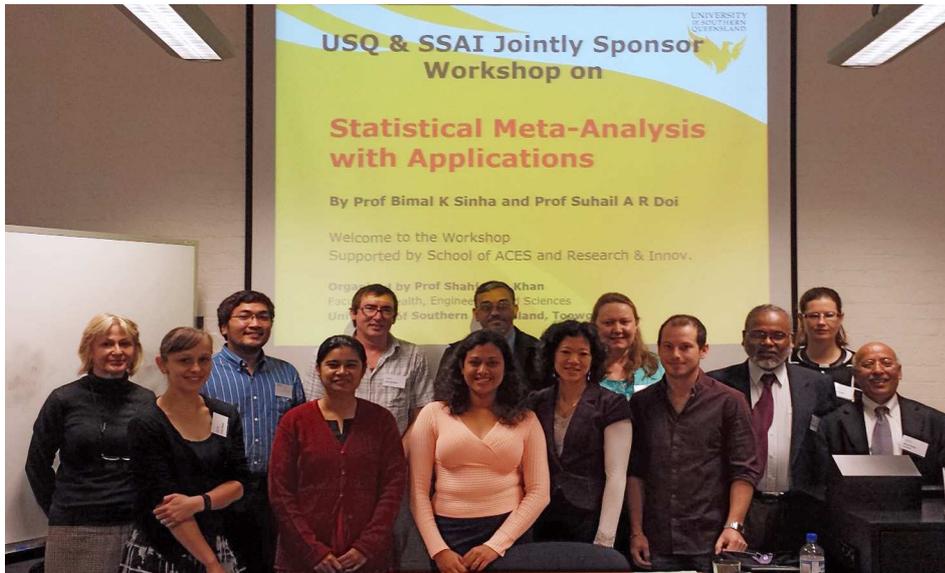## 16–17 June 2015

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The School of Agricultural, Computational, and Environmental Sciences, and Division of Research and Innovation of the University of Southern Queensland (USQ) hosted a Workshop on 'Statistical Meta-Analysis with Applications' in collaboration with the Statistical Society of Australia Inc. The Workshop was held at the newly acquired Ipswich Campus of USQ from 16–17 June 2015. Professor Bimal Sinha, University of Maryland, Baltimore County, USA and Associate Professor Suhail Doi, Australian National University, Canberra, Australia were the two invited presenters.

The organiser of the Workshop, Professor Shahjahan Khan of USQ, opened the inaugural session with a brief introduction of the meta-analysis within the systematic review and evidence-based decision making process and role of statistical methods in synthesising data from independent studies. He also highlighted applications of meta-analysis in many fields of medicine, agriculture, education and business, and discussed some the issues related to methods of allocation of weights under various models in the estimation of the common effect size of meta-analysis.

Professor Bimal K. Sinha started with some motivating real-life examples of data leading to the definition of measures of various effect sizes for continuous and binary outcome variables. He covered all commonly used estimators of common effect size and discussed their variance estimators and confidence intervals. He also discussed inference about the common mean of univariate normal distribution, publication bias, vote counting procedures, and heterogeneity issue along with the random effects (RE) model and meta-regression.

Professor Suhail Doi highlighted the main purpose of meta-analysis and focused on some of the problems inherent with conventional statistical meta-analysis, especially the issue of unfair redistribution of more weights to smaller studies under the random effects model. Under the title of 'Recent advances in the methodology of statistical meta-analysis' he presented the inverse variance heterogeneity (IVhet) estimator as an alternative to the RE model estimator, and introduced quality effect (QE) model estimator based on his recent publications. Through extensive simulation examples he demonstrated the advantages and appropriateness of the new estimators.

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Participants and presenters of the meta-analysis Workshop at USQ, Australia

Twelve participants ranging from government departments, industry and academia from Queensland and other parts of Australia attended the Workshop. They were very happy with the presentations and management of the event and thanked USQ and SSAI for organising the valuable Workshop.