Preface for the Jayanta K. Ghosh Memorial Volume of Sankhya, Series B

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Professor Jayanta Ghosh was one of the leading thinkers in statistics from the moment he started originating methodological ideas. He published his first paper in a refereed journal in 1960, when he was 23 years of age. Since that time he has produced over 30 PhD students, generated a vast stream of influential publications, and served the broader statistical world in a wide variety of leadership positions. Known to most of us as simply 'JKG', his name remains a byword for excellence.

This issue is in his honor. We hope the work offered here adds to the acclaim in which he is held. The 12 papers represent four of the branches of statistics in which JKG was active and in which his contributions remain important.

Fully six of the papers concern non-parametrics in various forms. Arguably, this was JKG's main area of interest starting in the late 80's. The first paper is by Tan and Ghosal. They embed a nonlinear regression model in a nonparametric regression model to study the solution space of an ODE. The second paper is by Hellmayr and Gelfand. They use an extension of the Dirichlet process as a prior for functional data analysis. The third paper is by Tokdar and Martin. They develop a Bayes test for normality versus a Dirichlet process mixture. The fourth paper is by Martin. He gives a nonparametric estimator for the mixing density in independence models. The fifth paper is by Basulto-Elias et al. They study kernel deconvolution density estimators. The sixth pape in this area is by Cao and Mukhopadhyay. They use a semi-parametric model for longitudinal data to study the outcomes and patterns of missingness jointly.

JKG was concomitantly interested in model selection. Representing this we have two papers. The first is by Jeng et al. They use a LASSO penalty on linear regression models where the noise and relevant variables do not separate well. The second is by Bhadra et al. They do feature selection using a regularization based on the horse-shoe prior.

A third area where JKG worked at various stages of his career was survey sampling. Representing this we have two papers. The first is by Goyal et al. They develop a hierarchical Bayes method for unit-level nested error regression models to accommodate non-normal errors. The second is by J.N.K. Rao. He provides an extensive discussion on non-probability sampling and multi-sample problems.

Towards the end of his career, JKG was interested in computational methods, especially for high dimensional problems. Representing this we conclude with two papers. The first is by Klein et al. They develop a variety of tests in the normal context for singly imputed data. The second is by Pacchiardi et al. They develop computational techniques for approximate Bayes computing and apply them to modeling volcanic eruptions.

While not all of these papers are obviously 'applied', most of them are. Those that are not obviously applied solve problems that are immediately applicable to a variety of real data problems – as befits Sankhya B and recalls JKG's many subject matter publications.

In addition to his brilliance, JKG was also a singularly kind man. One of us (Datta) recalls the generous support for professional growth that he received from JKG and how often his research was enriched through JKG's tutelage. Datta and his wife treasure their memories of JKG and his wife. The other of us (Clarke) had the pleasure of visiting JKG in Calcutta at the end of 1994. Not only was JKG an exemplary host, he also gave me a Bengali handicraft item – a small glass case containing a statue of a boat made of shola. It sat on my shelf for some 20 years as a souvenir. It still sits there for the same reason.

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