
DASF 90 – A Celebration of the Contributions of Don Fraser, OC

Organizer and Chair: Nancy Reid (University of Toronto)

STEPHEN FIENBERG, Carnegie Mellon University
Fraserian Statistical Inference

In statistics we often read of Bayesian Inference or Fisherian Inference, sometimes known as Fiducial Inference. But in Canada, over the past 60 years, we have observed the evolution of a related statistical approach rooted in the longstanding work of D.A.S. Fraser. In this talk we discuss some aspects of Fraserian Inference and its influence, including on the present author.

ANA-MARIA STAICU, North Carolina State University
Testing for Additivity in Nonparametric Regression

In this talk I will discuss a novel approach for testing for additivity in nonparametric regression. We represent the model using a linear mixed model framework and equivalently re-write the original testing problem as testing for a subset of zero variance components. We propose two testing procedures: the restricted likelihood ratio test and the generalized F test. We develop the finite sample null distribution of the restricted likelihood ratio testing and generalized F test using the spectral decomposition of the restricted likelihood ratio and the residual sum of squares, respectively. Numerical investigation shows that the proposed testing procedures overperform the available methods for both fixed and random designs in terms of size and power.

GRACE YI, University of Waterloo
Functional and Structural Methods with Mixed Measurement Error and Misclassification in Covariates

Covariate measurement imprecisions or errors arise frequently in many areas. It is well known that ignoring such errors can substantially degrade the quality of inference or even yield erroneous results. Although in practice both covariates subject to measurement error and covariates subject to misclassification can occur, research attention in the literature has mainly focused on addressing either one of these problems separately. In this paper, we develop estimation and inference methods that accommodate both characteristics simultaneously. Specifically, we consider measurement error and misclassification in generalized linear models under the scenario that an external validation study is available, and develop several functional and structural methods.

DAVID BELLHOUSE, Western University
Pre-Don in Toronto

Prior to Don Fraser's arrival as a University of Toronto student in the 1940s, there were three general eras in the development of the field of statistics: the Victorian statistics movement, the development of mathematical statistics by Karl Pearson beginning in the late nineteenth century and the Fisherian revolution beginning in the 1920s. Within each of these eras I examine the impact of statistical developments on the faculty and curriculum at the University of Toronto, culminating with a description of statistics in the Department of Mathematics when Don entered the University of Toronto.