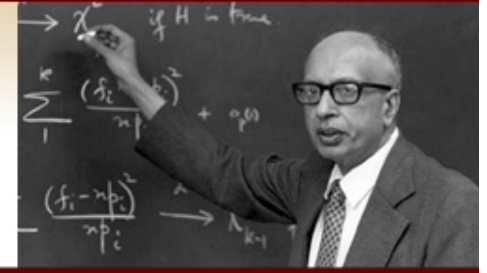


BAHADUR MEMORIAL LECTURES

In honor of Raj Bahadur's fundamental contributions to statistics and to our department.



The University of Chicago, Department of Statistics, presents the
Twentieth Annual Bahadur Memorial Lectures
Iain Johnstone

Departments of Statistics, Health Research and Policy, Stanford University

Monday, May 6, 2019

4:30 PM, Eckhart 133, 5734 S. University Avenue

Reception before lecture in Jones 111

“High Dimensional Classical Multivariate Analysis: Ladders and Local Asymptotic Normality”

The ladder of hypergeometric functions ${}_pF_q$ offers a classification of statistical distributions; in our case those of eigenvalues in multivariate analysis, as was first shown by James. Local asymptotic normality (LAN) transfers inferential questions from a sequence of potentially complicated models, for us involving high dimensional multivariate models with low rank structure, to a simpler limiting Gaussian model. In this talk, we outline an LAN theory for strong ('supercritical') signals in these models, emphasizing the systematic use of James' classification to guide the approximations. Confidence sets are used as an illustration.

Thursday, May 9, 2019

3:30 PM, Kent 120, 1020 E. 58th Street

“High Dimensional Principal Component Analysis: Biases and Balms”

When data is high dimensional, widely used multivariate methods such as principal component analysis can behave in unexpected ways. Upward bias in sample eigenvalues and inconsistency of sample eigenvectors are among the new phenomena that appear. In recent years there has been much progress responding to these phenomena, for example by exploiting shrinkage and sparsity. The talk will give a partial overview of this area.