Tenth Annual Bahadur Memorial Lectures

The Department of Statistics is proud to present the Tenth Annual Bahadur Memorial Lectures in honor of Raj Bahadur's fundamental contributions to statistics and to our department.

We are pleased to have **Steffen L. Lauritzen**, Professor and Chair, Department of Statistics, University of Oxford, as our honored speaker.

Steffen L. Lauritzen

"Sufficiency and Transitivity"

Monday, May 18, 2009, at 4:00 PM
Eckhart 133, 5734 South University Avenue
Refreshments will be served.

"Bayesian Networks for the Analysis of DNA Mixtures"

Thursday, May 21, 2009, at 4:00 PM
Eckhart 133, 5734 South University Avenue
Refreshments will be served, before the talk at 3:15 PM in Eckhart 110.

For further information and about building access for persons with disabilities, please contact Kelly Macias at 773.834.5169 or send email (kmacias@galton.uchicago.edu).

STEFFEN LAURITZEN
Department of Statistics
University of Oxford

Sufficiency and Transitivity

MONDAY, May 18, 2009, at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
Refreshments will be served.

ABSTRACT

One of Bahadur's fundamental contributions to statistical theory was his formal decision-theoretic study of Fisher's concept of sufficiency and an extension of this to the sequential setting based on so-called transitivity, ensuring that sequential decisions could be based on sufficient and transitive sequences without further decision loss. Interestingly, Fisher (1925 Theory of Statistical Estimation) very explicitly noted a transitivity property which automatically was satisfied for minimal sufficient statistics, for example ruling out functions such as the median could ever occur as minimal sufficient statistics. Freedman's early work on de Finetti type theorems also relied on a transitivity property. The lecture will briefly review the basics of these concepts and attempt to consider them in a modern light; with reference to recursive and efficient computation, for example of relevance in connection with the analysis of massive data streams.

The University of Chicago
Department of Statistics

Seminar Series

STEFFEN LAURITZEN
Department of Statistics
University of Oxford

Bayesian Networks for the Analysis of DNA Mixtures

MONDAY, May 21, 2009, at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
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ABSTRACT

Graphical models in the form of Bayesian networks have established themselves as useful and versatile for solving a variety of problems associated with forensic identification from DNA traces. This lecture will focus on the particular issue of analysing one or more traces of DNA from more than a single individual, with the purpose of separating out the contributions of each and establishing the identity of specific individuals. Such problems occur typically in criminal cases, either involving physical violence, or robberies and it is of interest both for the conviction of perpetrators and for initiating searches for individuals and further evidence. The lecture will attempt to explain both the problems, the associated genetic facts, the Bayesian network methodology and give examples of achievable results. The lecture is based on joint work over more than a decade with A P Dawid, R G Cowell, J Mortera, and others.