### The University of Chicago
### Department of Statistics

## Seminar Series

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## 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.