



The University of Chicago
Department of Statistics

BAHADUR MEMORIAL LECTURES

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Bayesian Adjustment for Multiplicity

MONDAY, April 11, 2011, at 4:00PM

133 Eckhart Hall, 5734 S. University Avenue

Refreshments following the seminar in Eckhart 110.

ABSTRACT

Issues of multiplicity in testing are increasingly being encountered in a wide range of disciplines, as the growing complexity of data allows for consideration of a multitude of possible hypotheses (e.g., does gene xyz affect condition abc); failure to properly adjust for multiplicities is possibly to blame for the apparently increasing lack of reproducibility in science. Bayesian adjustment for multiplicity is interesting, in that it occurs through the prior probabilities assigned to models/hypotheses. It is, hence, independent of the error structure of the data, the main obstacle to adjustment for multiplicity in non-Bayesian statistics.

Not all assignments of prior probabilities adjust for multiplicity, however, and assignments in huge model spaces typically require a mix of subjective assignment and appropriate hierarchical modeling. These issues will be reviewed through a variety of examples. If time permits, some surprising issues will also be discussed, such as the fact that empirical Bayesian approaches to multiplicity adjustment can be problematical.

For further information and about building access for persons with disabilities, please contact Laura Rigazzi at 773.702.8333 or send email (lrigazzi@galton.uchicago.edu). If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/info/statseminars>.