

**The University of Chicago**

Department of Statistics

**Seminar**

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**“Optimal Predictive Model Selection”**

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**Monday, February 18, 2002 at 4:00 PM**  
**133 Eckhart Hall, 5734 S. University Avenue**

**ABSTRACT**

Often the goal of model selection is to choose a model for future prediction, and it is natural to measure the accuracy of a future prediction by squared error loss. Under the Bayesian approach, it is commonly perceived that the optimal predictive model is the model with highest posterior probability, but this is not necessarily the case. In this talk we show that, for selection from among normal linear models, the optimal predictive model is often the median probability model, which is defined as the model consisting of those variables which have overall posterior probability greater than or equal to  $1/2$  of being in a model. The median probability model often differs from the highest probability model. Examples that are given include nonparametric regression and ANOVA.