

STANFORD UNIVERSITY
DEPARTMENT OF STATISTICS
DEPARTMENTAL SEMINAR

4:15 p.m., Tuesday, July 31, 2001
Sequoia Hall Rm. 200
(Cookies at 3:45 in 1st Floor Lounge)

Marina Vannucci
Texas A&M University

Bayesian variable selection methods in Chemometrics

We consider the choice of explanatory variables in multivariate linear regression with predictors arising as curves. Applications are to infrared spectroscopy, where a large number (several hundred) of explanatory variables is used, typically larger than the number of observations. We approach the problem from Bayesian modeling, using mixing priors and MCMC methods to explore the posterior distribution. We also investigate the use of wavelet methods, where curves are represented through wavelet coefficient sets. In our practical context we want to choose subsets which are good for prediction of all responses simultaneously. We predict by averaging over a set of likely a posteriori subsets but also look into different prediction strategies that use single best models.