



Pacific Institute *for the*
Mathematical Sciences

2014 PIMS-UBC Statistics Constance Van Eeden Lecture

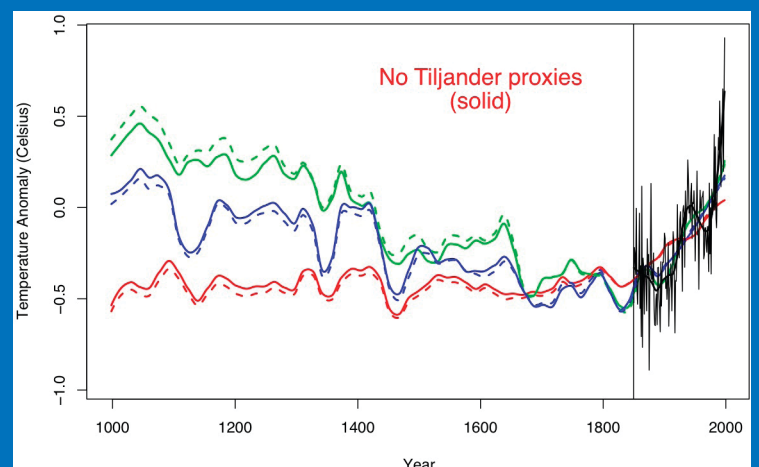
10 April, 2014
4:00 pm
pre-lecture reception at 3:30 pm

Earth Sciences Building room 1013
The University of British Columbia

The Lasso: A Brief Review and a New Significance Test

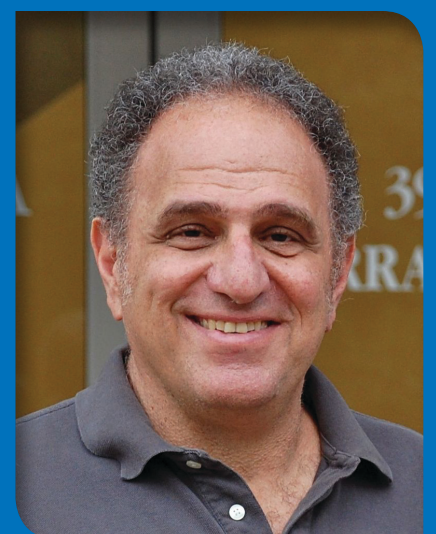
SPEAKER: Rob Tibshirani (Stanford University)

ABSTRACT: Tibshirani will review the lasso method and show an example of its utility in cancer diagnosis via mass spectrometry. He will then consider testing the significance of the terms in a fitted regression, fit via the lasso. He will present a novel test statistic for this problem and show that it has a simple asymptotic null distribution. This work builds on the least angle regression approach for fitting the lasso, and the notion of degrees of freedom for adaptive models (Efron 1986) and for the lasso (Efron et. al 2004, Zou et al 2007). He will give examples of this procedure, discuss extensions to generalized linear models and the Cox model, and describe an R language package for its computation.



This work is joint with Richard Lockhart (Simon Fraser University), Jonathan Taylor (Stanford Univ) and Ryan Tibshirani (Carnegie Mellon University).

BIO: ROBERT TIBSHIRANI is a Professor in the Departments of Statistics and Health Research and Policy at Stanford University, internationally known for his work in data mining and applied statistics. He develops statistical tools and makes exceptional contributions to methodology and theory for the analysis of complex data sets, for smoothing and regression methodology, in statistical learning and classification, and in application areas that include public health, genomics, and proteomics.



He has received numerous honors and awards for his great contributions, including the 1996 COPSS Presidents' Award and 2012 Statistical Society of Canada's Gold Medal. He is a Fellow of the Institute of Mathematical Statistics, the American Statistical Association, and the Royal Society of Canada, and a member of the U.S. National Academy of Sciences.