University of California, Irvine  
Foundations of Statistics Seminar Series  

THE FUTURE OF INDIRECT EVIDENCE  

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Monday, November 15, 2010  
4:00 – 5:30 PM  
Donald Bren Hall - Room 6011  
(Bldg #314 on campus map)  

Familiar statistical tests and estimates are obtained by the direct observation of cases of interest: a clinical trial of a new drug, for instance, will compare the drug's effects on a relevant set of patients and controls. Sometimes, though, "indirect evidence" may be temptingly available, perhaps the results of previous trials on closely related drugs. Very roughly speaking, the difference between direct and indirect statistical evidence marks the boundary between frequentist and Bayesian thinking. Twentieth Century statistical practice focused heavily on direct evidence, on the grounds of superior objectivity. Now, however, new scientific devices such as microarrays routinely produce enormous data sets involving thousands of related situations, where indirect evidence seems too important to ignore. Empirical (or Objective) Bayes methodology offers an attractive direct/indirect compromise. There is already some evidence of a shift toward a less rigid standard of statistical objectivity that allows better use of indirect evidence. The talk mainly consists of some examples from current practice, with a little bit of futuristic speculation.

For directions please refer to http://www.ics.uci.edu/about/visit/  
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