

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Heping ZHANG

Professor of Biostatistics
Yale University and Sun Yat-Sen University
U.S.A. and China

will give a talk

entitled

KENDALL'S TAU AND GENETICS STUDIES OF MULTIVARIATE TRAITS

Abstract

Identifying the risk factors for comorbidity is important in psychiatric research. Empirically, studies have shown that testing multiple, correlated traits simultaneously is more powerful than testing a single trait at a time in association analysis. Furthermore, for complex diseases, especially mental illnesses and behavioral disorders, the traits are often recorded in ordinal scales. In absence of covariates, nonparametric association tests have been developed for multiple (ordinal and/or quantitative) traits to study comorbidity. However, genetic studies generally contain measurements of some covariates that may confound the relationship between the risk factors of major interest (such as genes) and the outcomes. While it is relatively straightforward to include the covariates in the analysis of multiple quantitative traits, it is challenging for multiple ordinal traits. In this talk, we propose a weighted test statistic based on a generalized Kendall's tau to adjust for the effects of the covariates. We conducted simulation studies to compare the type I error and power of our proposed test with an existing test. The empirical results suggest that our proposed test increases the power of testing association when adjusting for the covariates. We further demonstrate the advantage of our test by analyzing a data set on genetics of alcoholism.

on

Tuesday, December 21, 2010

2:00 p.m. – 3:00 p.m.

at

**Room 524, Meng Wah Complex
(behind the Chong Yuet Ming Amenities Centre)**

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 2859 2466 for parking arrangement.

All interested are welcome