

# 國立中山大學應用數學系

## 學術演講

講者：羅小華教授

美國哥倫比亞大學統計系

講題：Why aren't significant variables automatically good predictors?

時間：2015/1/15 (星期四) 14:10 ~ 15:00

地點：理學院四樓理 SC 4009-1 室

茶會：15:00 於理 SC 4010 室 (系辦公室)

### 摘要

Thus far, genome wide association studies (GWAS) have been disappointing in the inability of investigators to use the results of identified statistically significant variants in complex diseases to make predictions useful for personalized medicine. Why aren't significant variables leading to good prediction of outcomes? We point out that this problem is prevalent in simple as well as complex data. We offer statistical insights on why higher significance cannot automatically imply stronger predictivity through simulations and a real breast cancer example. We also demonstrate that highly predictive variables do not necessarily appear as highly significant, thus evading the researcher using significance-based methods. If prediction is the goal, we must lay aside significance as the only selection standard. We suggest that progress in prediction requires efforts towards a new research agenda of searching for a novel criterion to retrieve highly predictive variables rather than highly significant variables. We offer an alternative approach that was not designed for significance, the Partition Retention (PR) method, that was very effective predicting on a long studied breast cancer data set, by reducing the classification error rate from 30% to 8%

中山大學應用數學系

敬請公告！歡迎參加！

應用數學系：<http://math.nsysu.edu.tw>

校園地圖：<http://web.nsysu.edu.tw/files/11-1000-1503.php?Lang=zh-tw>

交通資訊：<http://www.nsysu.edu.tw/files/90-1000-7.php?Lang=zh-tw>



應用數學系



校園地圖



交通資訊