

# **Family-based Tests of Association for Ordinal Traits in Nuclear Families**

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## **Abstract:**

I will begin this presentation with an introduction to the original Transmission/Disequilibrium Test (TDT), and then briefly review the extensions of TDT, particularly the association analysis of quantitative traits. For many complexity diseases and psychiatric conditions including smoking and substance use, the outcome variables are often recorded in an ordinal rather than a quantitative scale. We have developed a family based association test for ordinal traits. I will demonstrate that the power is enhanced when the new test is applied to ordinal traits, by comparing it to the use of the original TDT and its quantitative extension. Furthermore, this new test is also applicable to the dichotomous and quantitative traits, with comparable power, and thus can serve as a unified test of association analysis.

This is a joint work with Drs. Xueqin Wang, and Yuanqing Ye.

