

# JPSM/MPSM

## Survey Methodology Seminar Series

### Testing for Hardy Weinberg Equilibrium in National Genetic Household Surveys

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**Presenter**

**Associate Professor**

**Joint Program in Survey Methodology**

**Monday, April 22, 2013**

**12:10-1:00pm**

Speaker will be at the University of Maryland

Video Room 368 - ISR South Basement

Room 2208 LeFrak Hall– Maryland

#### **Abstract**

In population-based household surveys, for example, the National Health and Nutrition Examination Survey (NHANES), blood-related individuals are often sampled from the same household. Therefore, genetic data collected from national household surveys are often correlated due to two levels of clustering (correlation) with one induced by the multistage geographical cluster sampling, and the other induced by biological inheritance among multiple participants within the same sampled household. To address this problem, we develop efficient statistical methods that consider the weighting effect induced by the differential selection probabilities in complex sample designs, as well as the clustering (correlation) effects described above. We examine and compare the magnitude of each level of clustering effects under different scenarios and identify the scenario under which the clustering effect induced by one level dominates the other. The proposed method is evaluated via Monte Carlo simulation studies and illustrated using the Hispanic Health and Nutrition Survey (HHANES) with simulated genotype data.

*The Survey Methodology Program hosts this series of brown bag seminars on survey methods. The purpose is to have informal presentation and discussion of topics in survey methodology. They are open to anyone interested. If you would like more information, or if you have suggestions for methodological topics you would like to see presented, please contact: Jodi Holbrook at 647-3592*