



THE UNIVERSITY OF  
**CHICAGO**

Department of Statistics

MASTER'S THESIS PRESENTATION

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Simulation Study of SNP-Set Tests

WEDNESDAY, May 11, 2016, at 11:00 AM  
Jones 304, 5747 S. Ellis Avenue

#### ABSTRACT

We study the problem of testing SNP-sets in Genome-Wide Association Studies (GWAS). We aim to test the global null hypothesis that all single nucleotide polymorphisms (SNPs) in a region have no association to a disease versus the alternative that a sparse set of SNPs in the region have an association with the disease. We conduct simulation studies for several tests that are built upon the Higher Criticism (HC) test (Donoho and Jin, 2004), including the innovated-HC test, generalized-HC test (Barnett, Mukherjee and Lin, 2015), and our newly proposed factor-adjusted-HC test. We compare the power of these tests under various settings.

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For information about building access for persons with disabilities, please contact Laura Rigazzi at 773.702-0541 or send an email to [lrigazzi@galton.uchicago.edu](mailto:lrigazzi@galton.uchicago.edu). If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/arc/statseminars>.