

The University of Chicago
Department of Statistics
Master's Thesis Presentation

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**Permutation Tests for Small Sample Research:
The Abecedarian Project Case**

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ABSTRACT

This study applies small-sample permutation tests to the analysis of the Carolina Abecedarian Project data. Permutation procedures test a null hypothesis using permutations of the data based on exchangeability, while classical tests are based on normality or asymptotic theory. The Abecedarian Project was a controlled experiment study of potential benefits of early childhood education for underprivileged children. In order to investigate the treatment effects under small sample sizes, this study compares classical tests and permutation tests. Both unconditional and conditional permutation tests are conducted in linear regression models.