

**Indiana University-Purdue University  
Indianapolis**  
**Department of Mathematical Sciences**

STATISTICS SEMINAR

12:15pm—1:15pm, Tuesday, January 22, 2019  
LD 265

**Speaker:** Fei Gu (Postdoc)  
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**Title:** Modernization of Canonical Correlation Analysis

**Abstract:**

Canonical correlation analysis (CCA) is a multivariate technique that efficiently studies the relationship between two sets of variables. To this end, the canonical variates that are linear combinations of original variables are created within each set under some orthogonality restrictions, and then one often follows a standard interpretive approach that selects the original variables with prominent canonical loadings to assign substantive meanings to the created canonical variates. In such a standard approach, some cutoff value such as 0.3 must be chosen to determine the prominence of canonical loadings, while the choice of a cutoff value is inevitably arbitrary. To overcome arbitrariness in variable selection, we should consider the statistical significance of canonical loadings. In the literature, asymptotic theory for CCA has been developed but limited to only a subset of CCA parameters. Recently, a comprehensive COSAN modeling approach was proposed such that the standard error estimates for all CCA parameters can be obtained. Furthermore, the COSAN modeling approach also allows one to compute the standard error estimates for rotated solutions by means of the augmented information matrix method and the infinitesimal jackknife method, separately.