

# CHAD Center on Health, Aging, and Disability

## Biostatistical Support



### Grant Proposal

#### *Analytic Plan*

#### *Sampling Design*

- Randomization
- Sample Matching (case-control; propensity score)

#### *Power and Sample Size Calculation*

- Group Comparison on Means/Proportions
- Analysis of Variance/Covariance
- Repeated Measures Analysis of Variance/Covariance
- Linear Regression
- Logistic Regression
- Mediation/Moderation Effect
- Structural Equation Models
- Longitudinal Data
- Growth Curve Models
- Mixed Effect Models

#### *Database Management*

#### *Statistical Modeling*

#### *Data Analysis*

### Manuscript/Presentation/Abstract

- Statistical Methodology
- Data Analysis
- Result

### Data analysis

#### *Psychometric Analysis*

- Internal Consistency
- ROC Analysis
- Factor Analysis (EFA; CFA)
- Item Response Theory
- Multi-group Analysis

#### *Cross-sectional Data Analysis*

- Descriptive Analysis
- Group Comparisons
- Analysis of Variance/Covariance
- Linear Regression
- Logistic Regression
- Multivariate analysis
- Categorical Data Analysis
- Factor Analysis
- Generalized Linear Modeling
- Mediation/Moderation Analysis

#### Survival Analysis

- Propensity Score Analysis
- Analysis On Cluster Data
- Structural Equation Modeling
- Path Analysis
- Latent Class Analysis
- Latent Growth Analysis
- Hierarchical Linear Modeling
- Multilevel Modeling on Complex Survey Data

#### *Longitudinal Data Analysis*

- Generalized Estimating Equations
- Repeated Measures Analysis of Variance/Covariance
- Mixed Effect Models
- Generalized Growth Mixture Models

#### *Missing Data Imputation*

- Maximum Likelihood Estimation
- Multiple Imputation

#### *Clinical Trials*

- Intent-to-treat Analysis
- Last Observation Carried Forward
- Efficacy Analysis
- Adverse Events

#### *Genetics*

- Genome-wide Linkage Analysis
- Family-based Association Analysis

#### *Statistical Software*

- SAS/SPSS/MPlus/STATA/Matlab/S-plus
- Power Calculation (SAS, Mplus, GPower, PASS, etc)
- Dataset Conversion

#### *And any other hypothesis-based statistical analysis*

Sa Shen, Ph.D.

Director of Biostatistical Services

Center on Health, Aging, and Disability

3004 Khan Annex, 1206 South Fourth Street

Champaign, Illinois 61820, MC-586

(217) 300-9211 · fax (217) 265-0358

Email [sashen2@illinois.edu](mailto:sashen2@illinois.edu)