



NSF-Duke-NCSU-UNC

**Interdisciplinary Workshop for Undergraduate Students**

**May 28 - June 2, 2019**

**PROJECT ABSTRACT**

**Xinyi Li, SAMSI**

**Project III – Brain Imaging**

*“Imaging genetics studies on Alzheimer’s disease (AD)”*

**Abstract:**

The Alzheimer’s Disease Neuroimaging Initiative (ADNI) collects different biosignatures (neuroimaging, demographic, genetic and cognitive measures) from hundreds early-aged and aged people, which contain complementary information for the study of AD. The goal of this project is to apply modern statistical tools to explore the association between the brain-imaging measure and other measures. The main difficulties lie in the high-dimensionality and complex spatial structures in imaging data. Students with advanced knowledge on functional data analysis, nonparametric smoothing, and/or machine learning are preferred.