Statistical issues and challenges in biomedical studies

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Abstract

In this talk, I will present statistical issues and challenges that I have encountered in my biomedical research. Through real biomedical studies in transplantation, aging, and environmental science, I will illustrate the topics including data collection, data cleaning, formulation of research questions, data analysis, and related statistical methodology development. After a discussion on the issues and challenges, I will focus on semiparametric modeling, subsampling, comparison and identification of biomarkers for disease diagnosis. I will also present our newly developed methods tied to the real studies which can address some of the issues and challenges.