1161-62-149 **Dewei Wang*** (deweiwang@stat.sc.edu), **Yan Liu** and **Xichen Mou**. *Varying-coefficient regression with pooled biomonitoring data.* Preliminary report.

Human biomonitoring involves measuring the accumulation of contaminants in biological specimens (such as blood or urine) to assess individuals' exposure to environmental contamination. Due to the expensive cost of a single assay and possible unreliable data caused by the assay's limit of detection, the use of pooling has become increasingly common in environmental studies. The implementation of pooling starts by physically mixing specimens into pools, and then measures pooled specimens for the level of contaminants. An important task is to reconstruct individual-level statistical characteristics based on pooled measurements. In this talk, we will use the varying-coefficient regression model for the individual-level biomonitoring and provide methods to estimate the varying-coefficients based on different types of pooled data. Asymptotic properties of the estimators will be presented. We will illustrate our methodology via simulation and with application to pooled biomonitoring of a brominated flame retardant provided by the National Health and Nutrition Examination Survey. (Received August 15, 2020)