**Exercise 1**: Try to understand and run the SAS code contained in class slides

**Exercise 2**: Find one real longitudinal data file with missing values or generate data from some statistical models. Perform the process of missing data analysis including: (a). Choose multiple study variables with missing values and covariates; (b). Determine the research questions of interest; (c). Examine missing data pattern; (d). Compare the results from the following approaches: (1). Complete case approach, (2), Simple imputation approaches including mean, median and so on, (3). Observed likelihood approach, (4). Imputation approaches, (5). Propensity score approaches. (e). Perform statistical inference related to the research questions; (f). Interpret the results.

**Reading assignment**:

1. Engels and Diehr (2003). Imputation of missing longitudinal data: a comparison of methods. Journal of Clinical Epidemiology, 56, 968-976
2. Buuren (2007). Multiple imputation of discrete and continuous data by fully conditional specification. Statistical Methods in Medical Research