A developmental trajectory describes the course of a behavior over age or time. This 5 half-day workshop aims to provide participants with the training to apply a semi-parametric, group-based method for analyzing developmental trajectories. This methodology has four significant capabilities: (1) the capability to identify rather than assume distinctive groups of trajectories, (2) the capability to estimate the proportion of the population following each such trajectory group, (3) the capability to relate group membership probability to individual characteristics and circumstances, and (4) the capability to use the group membership probabilities for various other purposes such as creating profiles of group members. In addition, workshop participants will be trained in the application of six important extensions of the method—(1) the capability to add time-varying covariates to trajectory models, (2) the capability to estimate joint trajectory models of two distinct but related behaviors, (3) the capability, called multi-trajectory modeling, to specify trajectory in terms of two or more outcomes of interest, (4) the capability to account for non-random subject attrition, (5) the capability to link trajectories to distal outcomes, and (6) the capability to make individual level predictions of the probability of a distal outcome that can be updated in real time. In addition, workshop participants will receive training on the application of the Wald test for testing whether differences in model parameters across trajectory groups are significantly different.

The workshop will combine lectures with hands-on, computer lab experience in estimating, analyzing and interpreting trajectory models. Specifically, participants will be trained in the use of a STATA-based procedure for estimating group-based trajectories. This procedure called TRAJ has the capacity to fit models to psychometric, count and binary longitudinal data. Training will involve the application of TRAJ to masked data extracted from a major longitudinal study. Participants may bring their own data sets to analyze but it is important to recognize that our primary focus will be on supporting participants working on the designed training exercises.

This syllabus does not include a day-to-day schedule because this is the first time we have taught this workshop in an online mode but if you review the lecture notes (Tab2) in the Canvas modules you’ll see that the workshop is divided into fourteen distinct modules that we will be working through over the course of the workshop.