QICSS WORKSHOP 2006

ONSET, TIMING, AND THE MEANING OF THE 'MEAN GROWTH' IN TRAJECTORY MODELS

TRAINING SESSION
organized by the

QUEBEC INTER-UNIVERSITY CENTRE FOR SOCIAL STATISTICS (QICSS)

Location: **CIQSS, 3535 Queen-Mary Road, suite 420, Montreal**
Dates: **21 November 2006**

COURSE OBJECTIVES

The objective of this short workshop course is to introduce participants to modeling additional heterogeneity within individual-level trajectory analysis using a latent variable framework. Specific to this course will be the analysis, testing, and parameterization of multiple average trajectories or experiences rather than assuming one mean trajectory over time. Issues of timing will also be discussed, including the modeling of onset in growth models. Multiple types of "hybrid" models will be introduced and discussed in terms of fit and appropriateness for research questions in the social sciences. All examples and exercises will use the Duke Established Populations for Epidemiologic Studies of the Elderly (EPESE) data set and *Mplus* software.

COURSE CONTENT

- Short Introduction of Growth Models in SEM – this portion of the workshop will cover a short review of structural equation models (SEM) and how trajectory models may be estimated in this framework.
- Modeling Heterogeneity – this portion of the workshop will examine theoretical and methodological indications of more than one mean trajectory and how to model fundamentally different patterns of growth using latent variables.
- Modeling Timing – finally, the issue of timing will be introduced along with an examination of the strengths and weaknesses of traditional growth models in capturing differences in timing. A number of alternate "hybrid" models will be discussed.

TRAINER AND COURSE INFORMATION

This training session will be under the responsibility of Miles Taylor, Postdoctoral Scholar, Carolina Population Center, UNC-Chapel Hill. The workshop will be conducted in English. The morning session will consist of lecture based on theory and the afternoon will be used to cover computer exercises and specific questions. All workshops are given using *Mplus*.

SCHEDULE

- Short Introduction to Concepts in Trajectory Analysis and "Growth"
- Discussion of the Strengths and Weaknesses of assuming one average pattern of growth and the ability of fit indices to indicate otherwise

- Introduction to Categorical Latent Variables, Latent Class Analysis (LCA) of Trajectories and Growth Mixture Models (GMM), including alternate approaching to modeling nonlinear experiences.
- Modeling Timing in Growth Models including Survival Analysis
- Application to various research questions
- Workshop: Modeling flexibility in growth, including group (shared) experience and timing

SUGGESTED TEXT

Latent Curve Models: A Structural Equation Perspective. 2005. Kenneth A. Bollen and Patrick J. Curran. Wiley Series in Probability and Statistics.

Supplemental Readings and Other Course Materials Will Be Provided

PARTICIPANTS PROFILE

The course is open to graduate students, postdoctoral fellows, faculty, and researchers. Participants should have backgrounds in multivariate regression models, longitudinal analysis using secondary data, and prior introduction to structural equation models. The course is open to 15 participants who will be selected on the basis of achievement, background, and relevance of the course to their research or teaching.