

# Models for longitudinal survey data

Mary E. Thompson

*University of Waterloo*

Canada

**Abstract.** Large scale longitudinal surveys are increasingly being carried out for analytical purposes, using stratified multistage sampling designs at recruitment. The models that are of interest to social and health scientists include marginal (GEE) models, but also individual event history and growth curve models. There are two main approaches to handling the complexity of the sampling design. One well-established approach is to define the parameters of interest through census estimating equations, and apply sampling theory to the estimation of census estimating equations. The other is to extend the model to incorporate random effects at the level of the sampling units, thereby producing a model for the observations which renders the sampling design less relevant. The talk will present the advantages of each from both theoretical and practical perspectives.