Stochastic multi-population mortality models

Abstract
In this talk we consider the problem of how to develop a stochastic model for future improvements in mortality in two or more correlated populations. Projections based on single populations can run into problems for a variety of reasons. Amongst these:
(a) projections for two populations, when placed side by side can (and will) diverge;
(b) forecasts based on single small populations are highly unreliable.

We propose a framework that allows two or more populations to be modelled simultaneously, with a specific focus on an age-period-cohort model. This results in consistent correlated forecasts between populations, and also helps us to make much improved forecasts for small populations by linking these to similar larger populations.