

# Colloquium: Informing Health and Social Policy



FACULTY OF ARTS  
THE UNIVERSITY OF AUCKLAND

Whare Wānanga o Tāmaki Makaurau

The Work Programme of the Centre of Methods and Policy Application in the Social Sciences

**Date:** Friday, 30 July 2010

**Venue:** Statistics New Zealand, Statistics House, The Boulevard, Harbour Quays, WELLINGTON

Please RSVP to [a.zadoyanov@auckland.ac.nz](mailto:a.zadoyanov@auckland.ac.nz) for catering purposes, advising whether you will require morning tea, lunch, or both, and what session(s) you will attend.

## Programme

9.30–10.00am Morning tea

10.00–10.30am Introduction – Professor Peter Davis, COMPASS Director

10.30–11.15am Using high-performance computing with Census microdata: The Modelling Social Change Project (MoSC) – Lyndon Walker, Research Associate

This presentation will explain how social simulation was used to supplement the traditional statistical analysis in examining inter-ethnic partnership patterns over the period 1981–2006 using Census microdata. It will then discuss how the BeSTGRID cluster was used for the parallel processing of the simulation model, in order to use an evolutionary optimisation algorithm to search for optimal combinations of the partnering parameters.

The project was a Marsden funded study that investigated changes in the social structure of New Zealand by examining patterns of inter-ethnic partnering in married and de-facto relationships. The two main components of this study were a series of log-linear models examining the existing ethnic patterns, and a social simulation model of partnership formation that was populated with unit-level data from the New Zealand Census.

The simulation was written in Java and run on the Auckland cluster of the BeSTGRID computer network ([www.bestgrid.org](http://www.bestgrid.org)). The processing power of the cluster allowed the simulation to be run at a city level, with unit-level data that provided demographic information for all of the single eighteen to thirty year olds listed in the census in the Auckland, Wellington and Canterbury regions.

11.15am–12.15pm Developing a simulation tool for policymakers: The Modelling the Early life Course Project (MEL-C) – Professor Peter Davis, Dr Wendy Wrapson, Roy Lay-Yee

The aim of MEL-C was to develop the prototype of a modelling tool which will ultimately assist policymakers to ask “what if” questions across a range of social policy areas affecting children and young people. This presentation will first describe the development of the prototype, which comprises a dynamic simulation of early childhood, and then demonstrate its operation with an example taken from the impact of family factors on health service use.

12.15–1.00pm Lunch

1.00–2.00pm Evaluating performance in the New Zealand public hospital sector: The Enhancing Hospital Outcomes Project – Professor Peter Davis, Phil Hider, Dr Jaikishan Desai

Interest in measuring hospital performance in relation to quality and productivity has rapidly grown worldwide. This project is a collaborative project that aims to apply new developments in the use of performance indicators and statistical modelling to explore the potential for administrative data to help inform hospital policy and practice in New Zealand. This presentation will provide background information about the project, outline the methods that are being employed and highlight the key outputs that will be generated from the work. We will also present:

- (a) our econometric strategy for examining variation in output indicators of hospital productivity in New Zealand, and
- (b) descriptive statistics and selected results of graphical analyses of temporal and spatial variation in a basic set of output indicators (length of stay, day case surgeries, outpatient services, emergency department services, and unplanned readmissions).