## Abstract for "Which Health Inequalities Are Just: An Analysis Based on Canada's National Population Health Survey and the HealthPaths Microsimulation Model"

## Michael Wolfson (University of Ottawa, Canada)

## Geoff Rowe (Statistics Canada)

There is a ubiquitous positive correlation between health and income; the well-known socioeconomic gradient in health. There is also substantial evidence that the direction of causality runs primarily from socio-economic status to health. To the extent that higher incomes "buy" better health, even without spending any money on improving health, this might appear unjust. However, the web of causality connecting higher socio-economic status and better health (including longevity) is complex, and involves numerous other factors. Thus, discriminating between just and unjust degrees of health inequality is complex and depends both on the philosophical framework used to assess what is just, and on the empirics of the determinants of health, especially differences in health amongst heterogeneous individuals.

In this paper, we describe

- first the statistical analysis of the longitudinal National Population Health Survey (NPHS) used to quantify the "web of causality" observed in Canada from 1994 to 2010;
- then the tightly coupled (in design and use of the NPHS statistical results) HealthPaths microsimulation model;
- next, by means of a series of counterfactual simulations, ascribe causal importance to a range of related factors; and
- various philosophical approaches to the assessment of "just" (health) inequalities.

Finally we bring all these elements together to assess the extent to which observed health inequalities can be considered unjust. Since not all sources of health inequalities will be judged as unjust, the norm for a just distribution of population health will be simulated as a counterfactual where only just sources are involved. We then explore various metrics for indicating the "distance" between the actual and just distributions – challenging in itself as the objects of analysis are at the least bivariate (income and health) joint distributions.