

**Speaker:** Prof. Andrew Cairns

**Talk Title:** Medium Data and Socio-Economic Mortality

**Talk Abstract:**

In this session we will use highly-detailed geographical population data from the Office for National Statistics to assess what socio-economic and other factors drive mortality rates.

All-cause mortality data are available at the level of so-called Lower Super Output Areas (LSOA's), small geographical areas of about 1-2000 people that are socio-economically homogeneous. Alongside this we have a wealth of data that characterises each LSOA including a variety of deprivation indices, urban/rural, housing types and sizes, education levels etc.

At a less granular level we also have detailed data for causes of death that allow us to investigate which causes of death are the main drivers of inequality at the all-cause level.

We will discuss progress towards identifying which covariates have the strongest predictive power. Second, how much regional variation there is in our resulting models: is region a genuinely significant factor in the level of mortality or is observed regional variation simply reflecting differences in the socio-economic makeup of local populations.

The underlying research is part of the research programme "Modelling, Measurement and Management of Longevity and Morbidity Risk" funded by the Actuarial Research Centre of the IFoA.

### **Speaker Bio:**

Andrew Cairns is Professor at Heriot-Watt University, Edinburgh, and Director of the Actuarial Research Centre of the Institute and Faculty of Actuaries.

He is well known both in the UK and internationally for his research in financial risk management for pension plans and life insurers. In recent years his research has focused on the modelling of longevity risk: how this can be modelled, measured and priced, and how it can be transferred to the financial markets. Amongst his work in this field, he has developed a number of new and innovative stochastic mortality models.

He is an active member of the UK and international actuarial profession: he qualified as a Fellow of the Faculty of Actuaries in 1993; from 1996 to 2017 he was editor of the leading international actuarial journal ASTIN Bulletin - The Journal of the International Actuarial Association and editor-in-chief for the last 10 of these years; and in 2005 he was elected as a corresponding member of the Swiss Association of Actuaries.

In 2016 he was elected as a Fellow of the Royal Society of Edinburgh, Scotland's national academy of science and letters.