

Project proposal template – Faculty studentships Summer 2014

<i>Project title</i>	Statistical Modelling of a Century of Demographic and Public Health Trends using National Longitudinal	<i>Director of Study</i>	Dr Rosie McNiece
<i>Second Supervisor</i>	Dr Gordon Hunter	<i>School</i>	Mathematics
<i>Other members of supervisory team</i>		<i>Any requirements from applicant (eg degree in specific subject area)</i>	Degree in numerate or medical/ clinical dioscipline an advantage.

**Project summary
(max 1,000 characters)**

Over recent years, a large amount of data from sources such as census returns (every ten years, for 1841 - 1911), Borough and Parish records, and admissions to various hospitals (e.g. Historic Hospital Admission Records Project, <http://hharp.org/>) has become freely available in digital format. This can provide an invaluable resource for statistical investigations concerning periodic changes and trends in demography and health, an area of increasing interest at a national and international level ('Population Ageing in the United Kingdom, its constituent countries and the European Union' March 2012, ONS, 'A demographic portrait of Northern Ireland' Population Trends, Spring 2009, ONS). Similar datasets may be available in the public domain for other countries.

Utilisation of such longitudinal resources in the fields of demography, health and epidemiology is an area of increasing interest on a global scale. In particular, methods for the rigorous and reliable analysis of such resources is a rapidly developing area in the statistics world.

The proposed project, within the Longitudinal Statistics (LStat) research group in the School of Mathematics, will utilise advanced statistical methodologies in areas such as Generalised Linear Modelling, Bayesian Analysis and Information Theory to investigate patterns in birth, marriage, mortality and survival data from some of these sources, and/or sources available for other countries. This project would contribute to the international debate and interest in the field.