

The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning <u>www.isis-innovation.com/</u>... are automatically redirected to our new domain, <u>www.innovation.ox.ac.uk/</u>...

Phone numbers and email addresses for individual members of staff are unchanged

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Big Data for Population Health

Characterising large datasets can improve our understanding of human disease. Oxford's Big Data Institute will create a major hub for analysing digital healthcare information in new ways.



Martin Landray is Professor of Medicine and Epidemiology within the Nuffield Department of Population Health and Deputy Director of the Big Data Institute within the Li Ka Shing Centre for Health Information and Discovery. Phase 2 of the Li Ka Shing Centre will build on the high throughput biology activities in the Target Discovery Institute (TDI) by creating an Institute directed at obtaining and characterising large datasets to improve our understanding of human disease.

The UK and Oxford are uniquely positioned to lead globally in this new, emerging field of biomedical science. We already have access to very detailed information from large patient cohorts such as UK Biobank, and will ultimately have access to 50 million electronic patient records through the NHS. Plus, there is now much improved surveillance of infectious diseases that enables us to track prevalence and transmission globally. Meanwhile, the phenomenal output from the human genome is providing ever deeper insights into health and disease with large scale sequencing about to become routine. This information can now be digitised and analysed in new ways. The success of the Big Data Institute will depend heavily on the analytical skills available and the University's Departments of Statistics, Computing Science and Biomedical Engineering are likely to provide many of the capabilities needed to handle and interrogate these very large data sets.

The traction already gained by the TDI with industry collaborators, and the opportunities to initiate a whole new sector of health informatics, diagnostics and clinical decision support through the Big Data Institute, will make the Li Ka Shing Centre a major hub for commercialisation and economic growth. It has the potential to transform our understanding, treatment and management of human diseases.



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