

Road-mapping the Asian brain

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Scientists at The University of Nottingham are leading research that will develop the world's first 'atlas' of the Asian brain.

Working in collaboration with colleagues in South Korea, the project aims to build a detailed picture of how the Asian brain develops normally, taking into account the differences and variations which occur from person to person.

The resulting road-map of the brain could be used to help doctors in countries like South Korea, Japan and China to develop new diagnostic tools for age-related neurodegenerative diseases such as Alzheimer's, Parkinson's and dementia, allowing them to spot illnesses at a much earlier stage, thereby improving treatment options and outcomes.

The two-year project will marry the expertise of Nottingham academics in advanced brain imaging techniques, including ultra high field [magnetic resonance imaging](#) (MRI), with the clinical expertise and specialist computer software development skills of researchers at Korea University in Seoul.

Stephen Jackson, Professor of [Cognitive Neuroscience](#) in the University's School of Psychology, said: "Developing this atlas of the Asian brain will be a major step forward in furthering the field of neuroscience, which is developing rapidly in the East.

"We hope this two-year project will also act as a template for further UK-South Korean collaboration and knowledge transfer, which has been

highlighted by Government as a strategic priority."

The project, initially funded with a Global Partnership Fund grant from the British Foreign and Commonwealth Office (BIS), will see the Nottingham academics working with colleagues in the College of Medicine, Biomedical Engineering, and Psychology at Korea University, to scan the brains of healthy Asian adults using advanced MRI techniques.

Data from the hundreds of images produced will then be analysed and computer modelling techniques used to build up a detailed picture of how a normal Asian brain develops in adults, taking into account the slight variations that occur from person to person.

There are subtle differences in the size and genetics of the Asian brain compared to its Western cousin and the research will allow for the development of new diagnostic aids for age-related neuro-degenerative diseases which are specifically tailored to Asian patients.

The research will build on The University of Nottingham's reputation as a world-leader in MRI research — the technique was invented there by Professor Sir Peter Mansfield, whose work jointly earned him the Nobel Prize for Medicine in 2003.

Biomedical imaging remains a strategic research priority for Nottingham through its Sir Peter Mansfield Magnetic Resonance Centre, which hosts the UK's only 7 Tesla MRI scanner.

The University has recently established a UK Centre for Child Neuroimaging, a core theme of Nottingham's Impact Campaign, the biggest fundraising campaign in The University of Nottingham's 130 year history. It aims to raise £150m to transform research, enrich the student experience and enable the institution to make an even greater

contribution to the global communities it serves.

The work to map the Asian [brain](#) will also involve collaboration with academics at other UK and European institutions, including University College London, the Institute of Neurology, Institute of Psychiatry, Imperial College and the University of Aachen in Germany.

The collaboration between The University of Nottingham and Korea University is the latest in a long-running relationship between the two higher education institutions and follows the signing of a Memorandum of Understanding, along with 12 other universities in the Universitas 21 group, in 2009 that aimed to offer postdoc students international opportunities through a joint PhD programme.

Provided by University of Nottingham

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