Birmingham and Nottingham projects to strengthen UK-Brazil research links

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The Universities of Birmingham and Nottingham have strengthened their collaborations with Brazilian institutions after securing funding for a number of country-specific research projects.

Academics from both universities have won funding from the São Paulo Research Foundation (FAPESP) to undertake research into priority areas spanning the sciences, social sciences and humanities.

Working with academic peers from institutions from across the State of São Paulo, the scope of the joint research includes:

Magnetic resonance imaging (MRI) - The University of Nottingham is renowned as a leading centre for MRI and Brazil is putting similar facilities in place. The teams in São Paulo, Nottingham and Birmingham will share expertise and develop techniques on functional brain imaging to gain new insights on neurodegenerative and other brain diseases, leading to better treatment for these diseases.

Fear memory processing and associated brain function -The three research teams will identify how chemicals in the brain affect moods, which will lead to discovering new medications to prevent anxiety and depression.

Brazil's rise and its implications for world order - Brazil overtook the UK economy in 2011 to become the world's sixth largest economy. This project will look at Brazil's likely political and social leadership on the world stage and how it might influence and re-shape international relations.

Urban water quality management - As urban populations rise and rainfall patterns change, the demands and pressures increase on fresh water supplies and the natural environment. This project aims to identify these future pressures and solve the key issues in water quality management.

Developing quantum sensors for precision positioning and underground mapping - Working with the Brazilian team, who already have world-class facilities in place for the study of 'ultra-cold atoms', the combined international expertise will develop new applications in underground mapping, for processes such as mineral exploration.

Additionally, Hanshan Dong, Professor of Surface Engineering at the University of Birmingham, has secured funding to work with Brazilian partners on a project to improve the surface properties of stainless steel used in the oil/gas industries through plasma assisted thermochemical treatment.

Furthermore, a University of Nottingham researcher won funding to look into an area of importance for food security in Brazil. Olivier Hanotte, Professor of Genetics & Conservation, will work with Brazilian colleagues to examine the way in which cattle can adapt to different tropical environments and the fitness of hybrid cattle. This will eventually lead to a strategy for cross-breeding programmes, with implications for farmers and food-producers.

FAPESP hopes that these projects will have the potential to spawn future collaborations between researchers in both countries.

Professor Malcolm Press, Pro-Vice-Chancellor for International Engagement in the Americas at the University of Birmingham, said: "We are firmly committed to enhancing UK-Brazil research partnerships. These new collaborative projects across a number of key research areas clearly demonstrate this and we are delighted that FAPESP has chosen to support them."

Dr Alan Burbidge, Business Engagement and Innovation Services, University of Nottingham, said: "How we manage food security, bioenergy and water resources are global issues. Bringing international perspectives together to work on these topics will accelerate our understanding of the issues and, hence, accelerate solutions to benefit people worldwide.

"We are therefore extremely pleased to be working with excellent academics from São Paulo State and the University of Birmingham and look forward to these and other collaborative relationships becoming closer."

The FAPESP research projects are part of a significant joint investment by the Universities of Birmingham and Nottingham to support partnership development and research collaboration with Brazil. Other initiatives include 60 PhD scholarships for Brazilian students to study at Birmingham or Nottingham, a visiting fellows programme, and a series of other workshops and events. Both universities are also participating in the Science without Borders scheme and operate a joint office in Brazil.

Notes to Editors

For media enquiries, please contact: Catherine Byerley, International Media Relations Manager, University of Birmingham on +44 (0) 121 414 8254, Email: **c.j.byerley@bham.ac.uk (mailto:c.j.byerley@bham.ac.uk)** or Katherine Lakeland, International Media Relations Manager, University of Nottingham on +44 (0)115 846 7156.