

# UK-China Partners in Science

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In a spacious new building on the outskirts of Beijing a Chinese start-up company called CapitalBio is developing tiny devices, or chips, capable of reading the activities of thousands of human genes at a time. Better tests for monitoring tumours are just one of their many uses.

Next door, in China's new National Institute of Biological Sciences, more than a dozen government-funded teams are doing basic research in molecular and cell biology. The scientists leading them were all recruited from top US institutions.

A few kilometres away stands a gleaming multi-million dollar nanoscience centre funded by a Taiwanese microchip manufacturer. It has obtained scores of international patents on carbon nanotube materials in the past two years.

All this in a country that just 25 years ago was still emerging from political chaos and economic destitution.

Over the past few years China's overall R&D spend has been increasing by 20 per cent or more a year, outstripping the spending increases of all leading science nations. But how innovative and productive is China's growing R&D base? What are the emerging challenges and opportunities for established scientific countries like the UK? And how can R&D-based companies and organisations in the UK best position themselves to respond?

These are the key questions driving the work of the FCO's Science and Innovation network in China. Our staff are based not just in Beijing but also in Shanghai, Guangzhou in southern China and Chongqing in southwest China. The context we work in is that in a globalised world the UK's share of global R&D will inevitably diminish as China and other emerging economies increase their R&D output. A strong capacity

to collaborate with and access science and innovation in these countries will therefore become increasingly important if the UK is to remain a leading science nation capable of attracting inward R&D investment.

The S&I network in China is working with the Office of Science and Innovation, the research councils and other partner organisations in the UK and China to put in place the right channels and mechanisms for collaboration. In January 2005 we began a programme of missions, workshops, visits and media activities called *UK-China Partners in Science*. We have so far facilitated 70 activities involving close to 650 participants from the UK and more than 4300 from China.

The outcomes are encouraging. All six of the UK's natural science research councils are developing new or stronger ties with Chinese organisations. For example, the Council for the Central Laboratory of the Research Councils signed an agreement with the Chinese Academy of Sciences on laser science. And the UK's Medical Research Council signed agreements with three Chinese research organisations including the Chinese Academy of Medical Sciences covering areas such as stem cells, infectious disease and health research.

Updating Chinese perceptions of UK science and innovation is an important part of our work. The UK's historical contribution to science through the likes of Newton and Darwin is well known in China. But the UK's modern science strengths, its chip designers, expertise in climate change and high-tech clusters need and deserve a higher profile. We are building this profile by ensuring Chinese journalists get access to high-grade UK experts. Through *UK-China Partners in Science* we generated more than 500 print and website clippings and more than 50 TV

mentions as well as a novel UK-China science journalism awards scheme.

To function effectively as a facilitator the China S&I network also needs to provide UK scientists and policymakers with credible and informed access to the Chinese innovation system. Many leading figures from UK science including Sir David King, Sir Keith O'Nions, John Wood of the CCLRC and Colin Blakemore of the MRC have strong links with China going back many years or decades – as indeed does the UK's Science and Innovation Minister Lord Sainsbury. But over the past year we have assisted these and other opinion leaders to update and sharpen their knowledge and contacts through targeted visit programmes and high-ranking calls.

We are already working with our UK partners to build on the achievements of the past 18 months. A new phase of *UK-China Partners in Science* will soon be under way with funding from the OSI and FCO and focusing on six priority themes: clean and renewable energy; climate change, environment and sustainable development; infectious disease; biomedicine and the modernisation of traditional medicines; nanoscience; and space technology. A network of UK experts in these fields will assist us in driving collaboration forward.

We are in addition working with a consortium of UK universities and the Higher Education Innovation Fund to establish a joint UK-China innovation fund for supporting joint research with commercial potential. The work that has gone into developing institutional links over the past couple of years combined with the vital importance of China to global issues such as climate change and pandemic influenza make it a good moment to consider this and other forms of targeted funding of collaborative research with the world's most populous country.