

# Nurturing Knowledge Economies in the English Regions

*Professor Christopher Edwards, Vice-Chancellor of Newcastle University.*

Delegates from England's six "Science Cities" will gather in Newcastle upon Tyne for their third summit in February 2007 to discuss the progress being made in their efforts to generate science-based knowledge economies in the English regions.

Newcastle, Manchester, York, Nottingham, Bristol and Birmingham were designated as Science Cities almost two years ago by the Chancellor of the Exchequer, Gordon Brown, who recognised the need to develop sustainable knowledge economies outside London and the South East if the UK is to compete effectively in the global marketplace of the future.

Research-intensive universities are at the heart of the initiative. All six Science Cities are seeking new ways to harness the world-class technology and expertise possessed by their universities, to give

companies a globally competitive edge and to spawn new industries. The idea that universities can catalyse regional economic development is not new, although the UK has been less successful at producing results than some other countries. One of the biggest problems has been that resources have been provided in discrete packages, by a multitude of agencies and funding initiatives, creating barriers which have been difficult to overcome.

The Science City initiative provides a more holistic approach, based on partnership between universities, government and industry. This "triple helix" model was largely developed by the American academic, Henry Etzkowitz, who is now advising Newcastle, having been appointed Professor of Management of Innovation at Newcastle University Business School.



Regional Development Agencies are providing resources to pump-prime the Science Cities and are working with universities and other partners to develop the necessary infrastructure. The summit in Newcastle will provide Ministers with a progress report of the first two years of the Science City initiative, as well as allowing delegates to share ideas and discuss best practice.

There is a great deal of common ground between the six science cities, yet each has developed a distinctive approach, geared to its local needs. Newcastle is fortunate in that the regional development agency, One NorthEast, was first to recognise the crucial role higher education would play and as long ago as 1999 put universities at the heart of its regional economic strategy.

This visionary approach is now paying dividends. By the time Gordon Brown announced details of the Science City initiative in December 2004, the North East already had a number of relevant projects in place, including five "Centres of Excellence" bringing together industry and academic researchers in key areas. One NorthEast had also established excellent relationships with the region's five universities; Newcastle, Durham, Northumbria, Sunderland and Teesside.

Newcastle was therefore able to move quickly to seize opportunities. When a 22 acre site became available in the commercial heart of the city in 2005, as a result of a



*Science and Innovation Minister Lord Sainsbury visits a "clean room" at Newcastle University, where nanotechnology devices are manufactured without fear of contamination by dust or other particles.*

major employer relocating to new premises, the majority of the site was purchased for £33m by a partnership of One NorthEast, Newcastle City Council and Newcastle University, with a view to redeveloping it as the “hub” of Science City. The partnership has ambitious plans to develop this site with public and private money and envisages that some of the region's best scientists will work there, alongside research and development teams from leading companies.

Newcastle University Business School will play an important role, building bridges between the partnership and the private sector, and has recently announced that it is creating new headquarters close to the hub. The partnership also has the benefit of advice from the business software company Sage PLC, one of Newcastle's most successful and progressive businesses, whose Chief Executive, Paul Walker, chairs the science city leadership group.

As the hub of Newcastle Science City develops, it will form relationships with existing research centres in the city, including the Centre for Life, the Campus for Ageing and Vitality and, of course, the University itself.

The Centre for Life is perhaps best known as the home of stem cell research in Newcastle. This unique facility was a Millennium Project and can be regarded as a pilot for Science City, since it has brought together researchers from Newcastle and Durham Universities, clinicians from the Newcastle NHS Foundation Hospitals Trust and biotechnology businesses, to work together in new and innovative ways.

The University's Campus for Ageing and Vitality, located at Newcastle General Hospital, is modelled along similar lines. It has grown into one of Europe's largest groups of researchers and clinicians specialising in old age medicine and has forged links with the private sector, including a major global company operating in this area.

Newcastle University campus is central to the city geographically as well as economically. With 4,600



*This atomic force microscope is among Newcastle University's impressive array of research facilities which enables it to work with high-tech companies.*

staff and over 17,000 students, the University has helped hundreds of companies develop products and processes through research, consultancy and postgraduate student placements. The process is encouraged via outreach organisations such as Knowledge House, which provides a one-stop shop for companies seeking access to university technology and expertise. More recently, the University has established the Stephenson Centre to work with businesses in various engineering disciplines.

Clearly, Science City is an extension of an ongoing process. Newcastle and the North East have in fact been listening to Society and meeting its needs for centuries; by developing steam power, railways and electric light; designing better housing, opening the world's first department store and introducing the first water fluoridation system, to name a few innovations which have changed the world.

The entrepreneurs who forged the region's powerhouse economy in the 19th century recognised the importance of advances in technology and skills to sustain key industries and helped to establish the colleges which were the forerunners of Newcastle University. While these traditional industries have all but disappeared, the ethos of applied research and vocational teaching survives in the University to this day.

As Vice-Chancellor of Newcastle University, I have pledged that the University will “transform” in order

to deliver on the Science City agenda. We will develop better ways of working with businesses, attracting more and bigger companies and other organisations to work with us, and creating the right conditions for University spin-out companies to grow larger, sowing the seeds of future industries.

We are crossing other boundaries, too, since we recognise that it is not possible to create a knowledge economy on science alone and that we must engage Society at all levels. For example we are forging links with schools and colleges through our education workstream and will in future contribute to the science curriculum and raise aspirations. Education is already a key theme at the Centre for Life, which has enthused thousands of local youngsters about human genes and DNA, as a result of school visits to its Lifelab centre. The University campus also attracts thousands of young visitors each year to its open days, museums and public lectures. Engagement with young people is regarded as particularly important because we are sowing the seeds of the next generation of scientists and skilled employees. Our Science City will therefore be sustainable.

We have also decided that Newcastle's geographical boundaries should not be barriers and we are extending the principles of science city to the “city region” of North East England. This is allowing us to engage with more key businesses, for example the chemicals industries on Teesside, as well as benefiting from our partnerships with the region's other universities, such as Durham in stem cell research.

The Science Cities initiative is moving forward quickly and I am sure that all six designated cities will be able to demonstrate significant progress at the forthcoming summit. It is essential that the momentum is kept up — and not just for the benefit of the six Science Cities. The fact is that all of the UK's cities, towns and regions will be vulnerable if the UK fails to respond adequately to competition from emerging countries such as China, India and Brazil.