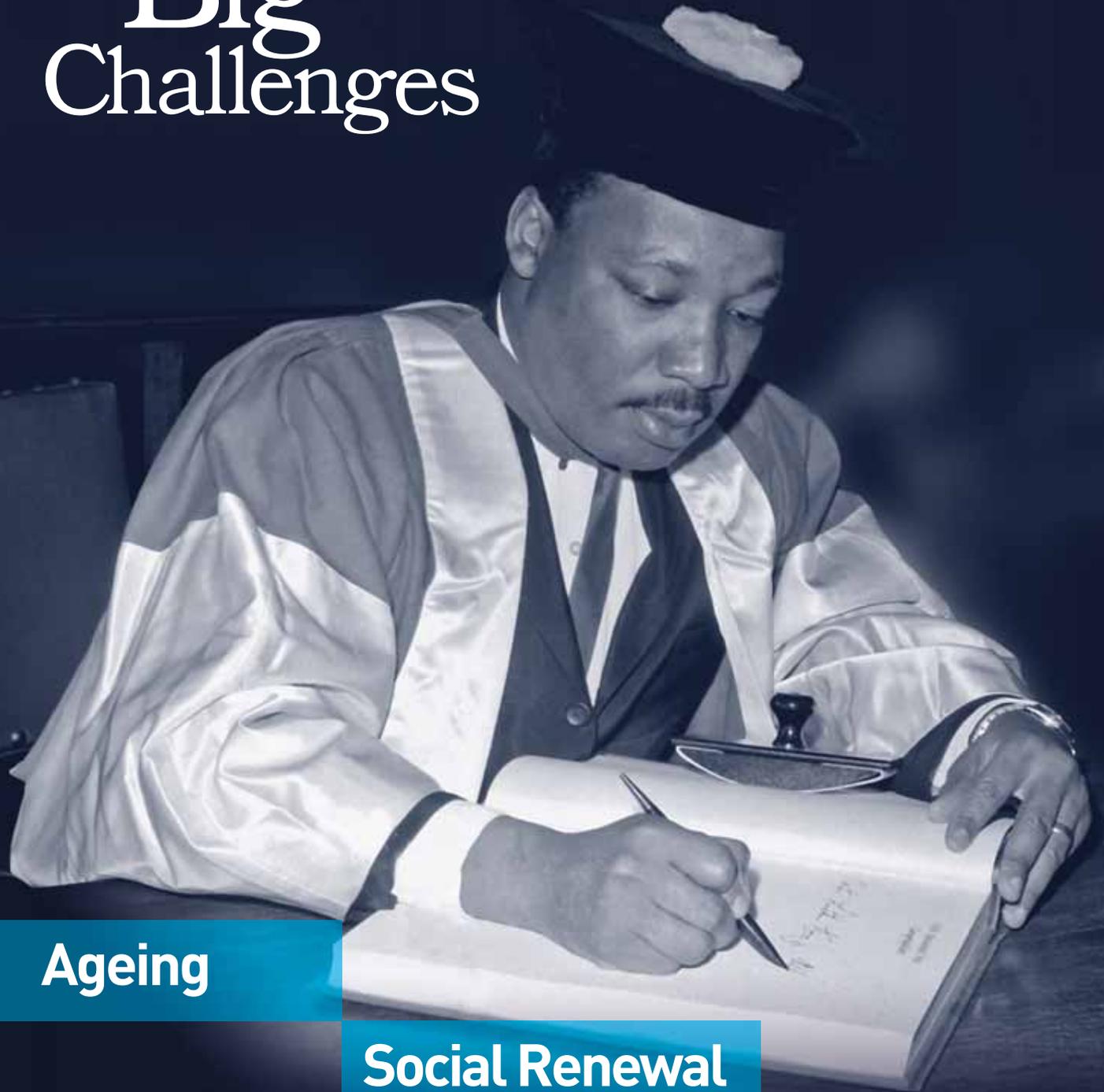


Tackling Society's  
**Big**  
Challenges



**Ageing**

**Social Renewal**

**Sustainability**

# Tackling Society's Big Challenges

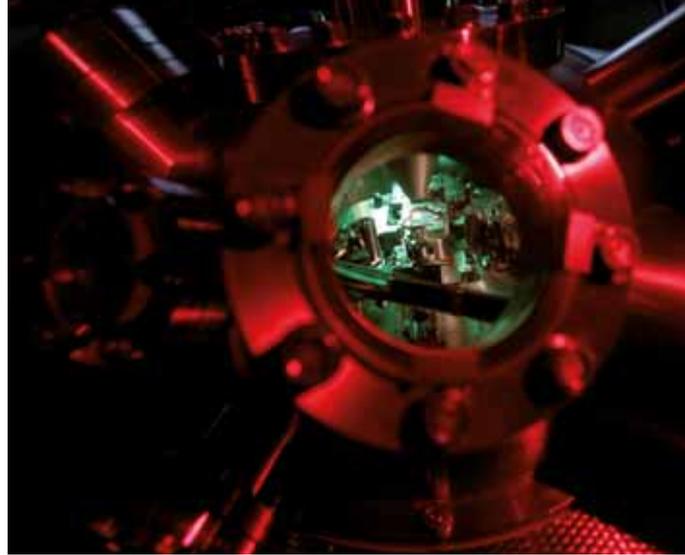
On 13 November 1967, Newcastle University made the historic award of an Honorary Degree to Dr Martin Luther King Jr – the only UK university to honour the inspirational civil rights campaigner during his lifetime. In his acceptance speech, Dr King spoke of his struggle to deal with three 'great and grave problems that pervade our world': racism, poverty and war. Forty-six years later, addressing the profound challenges that affect people's lives across the world is the hallmark of our work at Newcastle University.

## Excellence with a purpose

Modern universities focus by and large on subjects that would still be recognisable to the great and good of the past. For example, Charles Grey (Prime Minister from 1830 to 1834, author of the Great Reform Act, tea inventor and one of the greatest citizens of our city) benefitted from an education in English and Latin that could be undertaken almost identically today in at least two dozen universities.

Academics see the world through the prism of these time-honoured disciplines. They have strength and meaning, and often represent hundreds of years of human thought and experience. They provide rigour and a training that equips students with a framework to interpret the modern world. Unfortunately, society's big challenges rarely fit neatly into these traditional and time-honoured academic disciplines. Increasingly, academics are recognising that working solely within conventional academic boundaries is restrictive, and they are actively seeking opportunities to broaden their teaching and research by working collaboratively with colleagues in other disciplines.

The non-academic world uses a different framework to tackle the same landscape. Modern politicians debate issues like climate change, security, public order, pensions, health and innovation – real-world challenges that reflect the needs of society. Although academic disciplines are rarely mentioned directly in such debates,



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few would dispute that the thinking of all of us – including politicians – is conditioned by our education. The problem is, however, that the connections between academic education and practical problem solving are often tenuous. These problems stem from both sides. For those grappling with pressing issues, it may seem just too difficult to transform conventional academic thought into something more practical. For academics, there has long been a reluctance of the majority to engage with messy reality. As a result, innovative thinking is too often underpowered and public investment in university research not fully exploited.

To address the demand side of research by responding to some of the most pressing needs within society, Newcastle University developed the concept of societal challenge themes, under which we now group a significant part of our research. These themes are Ageing, Social Renewal and Sustainability.

By recasting our activities in this way, we hope to help society at large to better understand where we can help make a difference – and the University can demonstrate its commitment to excellence with impact.

The themes are rooted in three clear principles: firstly, they are issues to which we have real expertise to contribute; secondly, they are topics of major global interest but also ones which have significant resonance in the United Kingdom; and finally, they are areas in which we have developed genuine engagement with the public and numerous stakeholder communities, so that we have a deep understanding of the issues.

Overall, the three themes are a striking illustration of the University's strategy of both academic excellence – our capability – and our status as a civic university which drives our commitment.

Cover: Dr Martin Luther King Jr signs the University's Roll of Honorary Graduates.

1. The University's X-ray Photoelectron Spectroscopy probe, which is helping Newcastle University engineers to discover new sources of green power.
2. School children at the Great North Build exhibition, which launched the Social Renewal societal challenge theme.
3. The Coming of Age exhibition at the Great North Museum: Hancock.
4. Researchers at the Centre for Integrated Systems Biology of Ageing and Nutrition are leading the world in explaining the evolutionary genetics of ageing.
5. Researcher Sophia Stavrakakis, whose research aims to improve the health and welfare of pigs on farms across the UK.
6. Rakesh Bharti Mittal, Shami Chakrabarti and Lord Garry Runciman, who received Honorary Degrees for their contributions in the field of social renewal.
7. Music workshops formed part of the Ageing Creatively study into the role of creativity on wellbeing in later life.
8. One of the images from the Sustainability theme's 'Enough, For All, Forever' campaign.



The University's Campus for Ageing and Vitality.

Life expectancy is increasing at an ever-faster rate, with recent figures predicting that at least one in four children born in 2012 will celebrate their 100th birthday. This has profound social and economic implications for us all, as was highlighted by the 2013 House of Lords report on *Public Service and Demographic Change*.

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The Ageing societal challenge theme recognises ageing as one of the most important long-term trends worldwide. The theme is led by the Newcastle Initiative on Changing Age (NICA), which is working to harness the opportunities that an ageing population represents by promoting Newcastle University as a leading centre of excellence in ageing research, learning and teaching.

Under NICA's leadership, the Ageing theme goes from strength to strength. The National Institute for Health Research Biomedical Research Centre (NIHR BRC) on ageing, located on the University's Campus for Ageing and Vitality, has recently been renewed for five years with greatly increased funding. It is the only NIHR BRC north of the 'golden triangle' of London, Oxford, and Cambridge, and a national flagship supporting research on many age-related and chronic diseases. In addition, Newcastle has been awarded a new Medical Research Council-Arthritis Research UK Centre for Integrated Research into Musculoskeletal Ageing, jointly with Liverpool and Sheffield.

The state-of-the-art Biomedical Research Building was officially opened by Sir Alan Langlands, Chief Executive of the Higher Education Funding Council for England in September 2012. The latest development on the Campus for Ageing and Vitality, it brings together clinicians, researchers and businesses under one roof. The facility includes the innovative NHS Clinics for Research and Service in Themed Assessment, providing a 'one-stop' approach to treating older patients with complex multi-morbidity.

NICA has also been working closely with researchers investigating the many ways in which the digital

economy can support active and healthy ageing. The Ageing Creatively project, funded by the Research Councils UK Lifelong Health and Wellbeing Initiative, is looking at how the creative arts can be validated as interventions to improve wellbeing in later life. Following its huge success at the Great North Museum: Hancock, the Coming of Age exhibition transferred to London during the summer of 2012. The show attracted a lot of media attention, including a very positive review in *The Lancet*.

NICA participates in the enterprise module run by the University's Careers Service, which aims to develop students' problem-solving and entrepreneurial skills in the context of societal challenges, including ageing. A module that addresses the broader ageing agenda is also in development, which will be open to students of all disciplines and will be integrated into NICA's established engagement activities, such as VOICE North, a panel of older people drawn from across the North East.

The North East is the fastest ageing region in the UK in terms of its demography, and there are pockets of high longevity. However, the region is also challenged by a steep social gradient – life expectancy varies by over a decade within Newcastle city boundaries – with its roots in socioeconomic inequalities. Our Charter for Changing Age [www.ncl.ac.uk/changingage/about/charter.htm](http://www.ncl.ac.uk/changingage/about/charter.htm) has been adopted as a framework to shape the North East's response to an ageing society, signed by all 12 local authorities, and NICA is working with Newcastle City Council to make Newcastle a World Health Organisation 'Age Friendly City'.



The Great North Build exhibition at the Great North Museum: Hancock.

The Social Renewal societal challenge theme addresses the question: 'how can people, societies and communities thrive when faced with rapid, transformational change?'

In Britain and in many other countries, the impact of globalisation, technological change, population growth and migration, escalating demand for energy, foodstuffs and other raw materials, and the unevenness and perturbing effects of capitalist economic growth are creating challenges of great magnitude to which there are no simple or obvious responses. The old certainties and big assumptions about the world order that have governed our thinking since the end of the Second World War no longer seem valid, and there is a dearth of fresh thinking about how best to respond to the mighty challenges of the age such as government debt, faltering economic growth, rising unemployment (especially amongst young people), communities in decline, and rising inequalities in income, health, education and wealth. For many people, the failure to provide convincing responses to these challenges has exacerbated their sense of powerlessness, which in turn threatens to undermine politics and the legitimate authority of government.

The Newcastle Institute for Social Renewal (NISR) is not a front-line agency. Rather, the intention is to engage in the process of renewal as a partner and ideas generator in three ways. Firstly, we intend to be a thought leader in social renewal. Secondly, we will engage in the production and dissemination of high-quality research that informs policymaking at all levels, governmental and non-governmental. Thirdly, we intend to work on selected projects on a co-production basis with partners to improve the practices and effectiveness of social renewal initiatives. Our intention is to explore new ways in which a research-intensive

university – its staff and students – can connect with civil society in order to make a difference. This approach builds squarely upon the Newcastle tradition as a civic university actively engaged not only in the affairs of its city and region, but also nationally and globally.

Our launch-year events included the Great North Build, in which families were invited to imagine their ideal city using lego bricks; public lectures by Lord Patten, Claire Tomalin, Sugata Mitra, Richard Sennett, Hilary Graham and many others; the Claudia Jones Memorial Lecture remembering our award of an Honorary Degree to Dr Martin Luther King Jr; James Timpson's initiative on enterprise in prisons; a discussion of Two-Speed England (organised with the Town and Country Planning Association); and Whatever Happened to Equality? (with the Great Debate). NISR was also pleased to sponsor the *Evening Chronicle* Community Champions awards. Finally, at a special Honorary Degree Ceremony, doctorates were awarded to brothers Sunil and Rakesh Bharti Mittal, Shami Chakrabarti and Lord Garry Runciman.

Our initial priorities are arts and culture in social renewal; citizenship; digital futures; enterprise and innovation; health and inequality; learning for change; learning from the past; people, place and community; social justice and injustice; wellbeing and resilience. We are fortunate to have a large number of excellent researchers who are already engaged with policymakers and organisations who wrestle with the challenges of social renewal. By focusing our efforts, working together and engaging in knowledge exchange, we will continue to deliver excellence with a purpose.



Bringing together academia, industry, key stakeholders and local communities to share knowledge, experiences and expertise has underpinned the research carried out under the Sustainability societal challenge theme.

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Regardless of people's views on the human contribution to climate change, few can disagree that we as a species must learn to live within our means – using the finite resources of the Earth in the best possible manner.

Long-term sustainability is only possible if the distribution of resources is fair. The world is already seeing conflicts driven by access to resources like oil and even water, and these will clearly multiply in number if inequality is allowed to go to further extremes. It is also vital that we are fair to our children and future generations: they will not thank us for consuming their future, so we must become good ancestors bequeathing not just heirlooms but opportunities.

The University is leading the way in finding solutions to long-term sustainability on both a global and local scale, forging links with key partners regionally, nationally and internationally, working together to ensure a sustainable future. This is underpinned by the University's vision of excellence with a purpose, marrying world-class research with real, visible impact within society.

Working with global companies such as Airbus, BAE Systems, Jaguar, Land Rover and Renault, we are pioneering research into the development of new motors and electromagnetic devices for the electric vehicles of the future.

We are at the forefront of the UK's move towards a low-carbon economy. Drawing on our expertise together with Northern Powergrid, Siemens, EA Technology and others, we are leading the country's largest smart grid project, the Customer-Led Network Revolution (CLNR), which also involves 14,000 Smart Meter customers.

The University is leading a £5.5 million research project investigating new ways to provide cheaper, cleaner water. Working with Northumbrian Water Ltd, a unique team of engineers, computer scientists, biologists and mathematicians is exploring the potential of micro-organisms to provide clean water for everyone.

Our research spans the globe, supporting rural communities in developing countries to integrate renewable energy and optimise food processing to minimise post-harvest crop losses.

In March 2013, the government announced that the University is to lead the £7 million Neptune National Centre for Subsea and Offshore Engineering. Part-funded by the Higher Education Funding Council for England, the Centre will be the first of its kind in the UK, bringing together industry and academia to create a world-class engineering research facility. The new centre will be at the forefront of our quest to harness the ocean's potential as a source of food, energy and medicine in the future.

Professor Phil Taylor, Director of the Newcastle Institute for Research on Sustainability (NIReS), which leads on the societal challenge theme, explains: 'The theme's current strapline is Enough, For All, Forever. It works well and has helped to establish the identity of NIReS. The next step is to start exploring some of the nuances behind it. We need to look more closely at challenging the negative aspects of consumerism and growth: for example, by using innovation as a basis for a new, more sustainable model of consumption, and then using this new model as a route to equality and justice on a global scale.'



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1. Digital futures – the potential for technology to make a difference to people's lives – is one of the themes being explored by the Newcastle Institute for Social Renewal.
2. Author and biographer, Claire Tomalin, signs copies of *Charles Dickens: A Life* after giving a talk as part of the University's Insights series of public lectures.
3. Members of Silver Surfers, a surf school aimed specifically at the over 50s.
4. (and facing page) Created entirely from recycled materials, the pop-up café was designed to challenge perceptions of waste as well as explore new ways of creating sustainable buildings.
5. The Careers Service's enterprise module aims to develop students' problem-solving and entrepreneurial skills in the context of the societal challenge themes.
6. A singing workshop with a group of people aged 55 and over, which formed part of the Ageing Creatively study.



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