



## Forward Strategy 2015 – 2019

### Summary



## The Purpose of N8 Research Partnership

N8 Research Partnership is a not-for-profit collaborative organisation, established and funded by the eight research intensive universities of the North of England – Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York.



### N8's role is to:

- 1) Promote deeper collaboration between universities, business & society
- 2) Establish innovative research capabilities & programmes of national and international prominence
- 3) Drive economic growth by generating income, supporting jobs and new businesses

### To deliver these in the 2015-2019 timeframe, the following approaches are proposed:

- 1) We will **pioneer collaboration, knowledge exchange and engagement activities** – to establish innovation communities that engage across business, public sector and society.
- 2) We will **bring forward programmes of world class interdisciplinary, collaborative, translational research** – to deliver real world impact, enabling the North of England to take a leading position in rebalancing research excellence.
- 3) We will ensure that excellent translational research innovation will lead directly or indirectly to investment (within universities *or* in related businesses), and enable business innovation and societal transformation. To achieve this we will **promote the capabilities within the North** as an opportunity for investment in the region.

## The Strategy of N8 Research Partnership

### Delivering Interdisciplinary Research Excellence

N8 Research Themes are being established, in areas with:

- Significant potential for growth to reach international or world class status and recognition within five years.
- Established strengths in multiple N8 institutions that demonstrate complementarity across research disciplines.
- A fit with identifiable external funding themes and opportunities.
- Compatibility with close strategic engagement/research co-production across sectors e.g. with industry or third sector, aiming to ensure involvement of a broad research community base.

A number of inter-related projects, programmes, and activities will be built in each Research Theme, that ensure research growth, and business or societal benefit. These project portfolios will make N8 an attractive partner for funders and industry, as well as attracting excellent academics to funded positions.

N8's Research Themes will typically feature a substantial component of industry/business engagement involving Open Innovation, Community Engagement, Co-Production Learning, and Mini-conference meetings. Senior N8 academics provide overall leadership for each Research Theme.

Engagement with business on these Research Themes will be coordinated through a single route, delivering a simple route to partnering with the 'power of eight' universities.

Currently, N8 has established two Research Themes:

### AgriFood

To date, most Northern Powerhouse discussion has not focussed on the importance of the rural economy in the region. The N8 AgriFood Resilience Programme will seek to address this, building on the N8 universities' research strengths in science, engineering and the social sciences to address key global challenges in Food Security. These include sustainable food production, resilient food supply chains, improved nutrition and consumer behaviours.

N8 institutions have a critical mass of excellence across AgriFood, bringing multiple physical, life and social science insights together. According to the Witty analysis, seven of the N8 universities rank in the top 20 for Agri-Tech and in Agri-Science.

Witty highlighted that N8 universities contributed:

- 31% of the total publications in Agri-Tech by the top 20 UK universities and 33% of publications from the top 20 universities in the Global top 1%.
- 25% of the total publications in Agri-Science by the top 20 UK universities, and 27% of publications from the top 20 universities in the Global top 1%.

N8 universities have world-class facilities relevant to AgriFood research - including six fully commercial research farms, with complementary and comprehensive capabilities focussed on cattle, crops, vegetables, and grassland - and specialist facilities such as GM handling, organic/conventional comparators and anaerobic digestion. N8 universities have complementary strengths in critical research areas including soils, crops, livestock and sensors & diagnostics. The N8 includes the greatest concentration of bioscientists engaged in AgriFood research within the UK.

N8 has been awarded £8 million from the HEFCE Catalyst fund for its AgriFood Resilience Programme – funding matched by the N8 universities. Across the N8, there are more than 370 researchers engaged in projects related to AgriFood, with £269m research funding won over the last six years, and over £4m from industry annually. Collectively, the eight universities' assets and expertise deliver a complementary and comprehensive platform - ideal for industry partnerships and for independent assessment on industrial innovations that can be tested in real-world environments.

**As a next step, the N8 AgriFood programme will:**

- Build a strong community of industry partners.
- Enhance the N8 profile as a unique multidisciplinary capability able to generate ideas and solve critical problems and evaluate their efficacy under realistic conditions anywhere in the Food Supply Chain.
- Take a “systems” approach to AgriFood that generates and evaluates solutions in commercially and environmentally relevant conditions.
- Focus on multi-disciplinary research and reinforcing multi-party relationships that deliver insights throughout the Food Supply Chain.

## **Urban & Community Transformation**

N8 is committed to the co-production of urban & community research, aiming to ensure a fully integrated multi-sectoral approach to understand and prioritise key issues and bring multiple stakeholders together. Through multiple strands of collaborative research, we will position N8 as a core contributor generating knowledge essential for an effective Northern Powerhouse - one which transforms Northern cities into interconnected, vibrant innovation hubs.

The lead N8 co-production project to date, N8 Policing Research Partnership, harnesses the insights of all police forces and police and crime commissioners across the North, along with the College of Policing and other major policing stakeholders, who work with N8 in identifying issues and challenges. The programme will enable the N8 Policing Research Partnership (N8 PRP), to take a major step forward in developing and testing innovative approaches to policing and crime reduction. It has been awarded a £3m grant from HEFCE, supplemented by matched contributions from policing partners and N8 universities.

N8 Policing Research Partnership is enabling policing partners to define and explore shared problems and challenges - drawing on common resources, skills and data assets in

collaboration with leading academics from a range of disciplines, to generate innovative solutions with national and international significance.

Other pilot projects that N8 is leading are helping us improve interactions with city partners in urban collaborative planning, and to engage more effectively with local communities.

**As a next step, the N8 Urban & Community Transformation programme will:**

- Build collaborative and innovative approaches with urban, community and regional and national stakeholders to address key issues and deliver real world impact through research.
- Establish a Northern Powerhouse virtual centre of excellence focused on 'Sustainable Urban Transformations'. The approach will be highly interdisciplinary, linking engineering, planning, architecture, geography, urban studies, critical social sciences, as well as computational analysis.
- Partner with leading cultural institutions in the North to establish a programme to build Cultural Heritage as a key component of Northern Powerhouse urban transformation.
- Ensure the research capacity and expertise of the N8 universities is harnessed to provide enabling conditions for economic growth, by supporting better societal planning, and urban reinvention.
- Utilise our research breadth and partnership expertise to address emerging challenges with an international and global relevance, such as cybersecurity.

## **New Opportunities**

Advancing these two exciting Research Themes is our major focus, but N8 will not stand still. Emerging opportunities are being identified for N8 to make major contributions within:

- The Bioeconomy – combining the recognised biotechnology expertise of N8 academia within life processes partnering with SMEs to drive forward the regional and national bioeconomy.
- Targets for New Medicines – a cross-institution initiative to bring disease and patient knowledge to bear with a coherent platform of evidence, to identify new disease intervention opportunities for medicines.
- Digital Creativity – to harness the regional excellence in gaming, computer programming, and artistic expression, in new partnerships involving academia, cultural organisations and SMEs.

These areas of N8 collaboration are at an early stage; however the recognition of these across N8 institutions as high potential areas for investment will provide the foundation for exciting project proposals from N8 in the coming years.

## Working with Key Partners

N8 is a collaboration-based model, and is actively seeking partners to deliver economic growth. The goals of N8 closely align with the goals of Local Enterprise Partnerships to engage universities as anchor institutions that deliver economic benefit.

N8 will work with Northern Health Science Alliance and other regional organisations, including identifying areas for collaboration.

N8 will continue to engage closely with government departments, Higher Education Funding Council for England, Research Councils, Innovate UK and additional funding organisations relevant to the integrated themes, for constructive discussions on strategic funding opportunities.

N8's key goals are to help society and the economy to grow and flourish. Our collaboration and innovation experience and expertise will be applied across N8 programmes, to enable N8 universities to act as anchor institutions for local, regional, and national societal and economic growth. We will help society and economy to flourish by applying academic insights to real world challenges, working in deep collaborative partnership and delivering interdisciplinary, cross-sectoral research.

## N8 Industry Engagement

N8 has a strong track record of close business partnership to drive translational innovation – for example the N8-founded regenerative medicine project, Regener8, has delivered innovation with dozens of SMEs in regenerative medicine; and N8 helped establish the Liverpool Open Innovation Hub for Anti-Microbial surfaces as a contact point for business innovation.

The N8 Industry Innovation Forum was established as a pilot initiative between the N8 Research Partnership, HEFCE and Innovate UK - to connect leading businesses with research intensive universities and other key organisations and networks involved in innovation.

N8 Innovation Forum events have catalysed many new collaboration discussions, with follow-up programme management support ensuring these flourish into a deeper collaboration. This pilot N8 programme has shown that facilitated engagement around key business-led challenges has the potential to deliver highly relevant new collaborations and to make new funding opportunities happen.

Subject to funding, we propose to expand our model of working closely with SMEs and with multi-national corporations to support their very different challenges with innovative research collaboration. N8 aspires to establish Innovation Communities that provide a programme of face-to-face, online and virtual collaboration initiatives, based within the North, but open to national and international businesses. We will also run open innovation community-building events enabling new cross-sector research areas to come together.

This Innovation Community approach, along with our current and future Research Themes and programmes, will ensure that N8 Research Partnership plays a central role in

embedding academia as a cornerstone of local and national translational research in the North, leading to economic investment and growth.

## Efficiency and Effectiveness

### Capital Facilities

Regional sharing of facilities is a desirable solution that enables researchers to be able to access high cost, high impact equipment where that is not required physically close to researchers' labs and where use is not required daily by the researchers.

N8 High Performance Computing is the flagship shared research facility within N8. Operating in a truly collaborative way, this capability has led to more than 36 partnerships with industry and has established a sophisticated approach to ensuring expensive equipment is utilised optimally within N8. Subject to funding, N8 has identified the need for a higher scale HPC facility to meet industry and academic needs across multiple research areas.

Through a HEFCE-funded collaboration, N8 has also established an equipment sharing toolkit, database and processes that make equipment sharing easier, with applicability across the UK. N8 is also pioneering a consistent set of metrics suitable for capturing current facility sharing, and will use this to understand how to increase facilities efficiency in future.

## N8 Research Partnership

*N8 Research Partnership is the collaboration body established by the eight research intensive universities of the North of England.*

*For more information on what N8 is doing, go to [www.n8research.org.uk](http://www.n8research.org.uk)*

