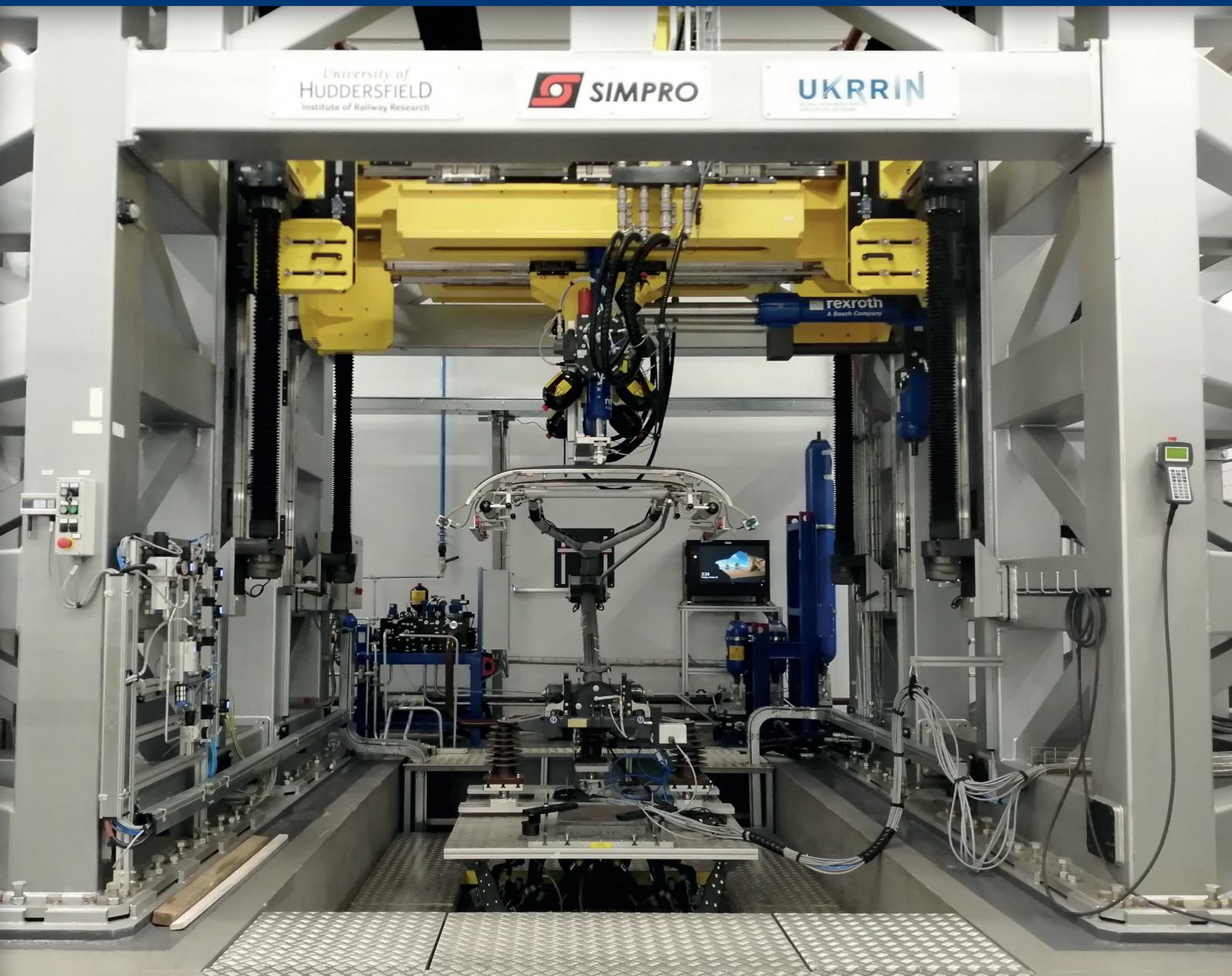


Knowledge Exchange Strategy 2021-2025



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Front Cover Image

“A world class full-scale pantograph test facility to support rail electrification and the development of novel current collection technologies”.

Professor João Pombo, Institute of Railway Research

Introduction to our Strategic Aims

The University of Huddersfield has the overarching aim to be an inspiring, innovative University of international renown which encompasses all aspects of its core activities – teaching, research, and knowledge exchange (KE).

Our strategic aims to 2025 are set out in the University’s Strategy Map illustrated below, along with our core values.

Vision

Our vision is to be an Inspiring, innovative University of international renown.

Mission

Our mission is to support, drive and deliver demonstrable societal and economic benefit through our knowledge exchange work.

Objectives

Within this KE Strategy we outline our objectives, how we intend to achieve these and how they align with developing government initiatives and strategies.



Overarching Themes

Strategic Context

Since production of the University's 2025 Strategy Map, there have been major developments, particularly in relation to our activities and actions to address the global yet locally-relevant challenges of accelerating climate change and the response to, and recovery from, the covid-19 pandemic.

The need for universities to support and enable government, society and business to respond and rise to both longstanding and rapidly evolving challenges has never been greater. The University of Huddersfield is well placed to respond to these challenges through all aspects of our activities. Through our Knowledge Exchange Strategy which links to the University's Research Strategy, we seek to outline how all our assets – people, facilities, expertise and knowledge – can be aligned to respond to and tackle the societal, health, climate and economic challenges that face us locally and globally. Areas of Strategic Research Importance (ASRIs) are strategic themes at the University of Huddersfield which create a focus for the development of our research portfolio in support of increasing its global reputation through the production of high quality outputs and generating impact.

As part of our work with leading Research Councils, we share our knowledge and expertise with businesses.

KE Concordat

The University is committed to the KE Concordat (KEC) to improve our KE practice and performance. We have embedded the eight KEC principles into our strategy development and they are the cornerstone of our approach in supporting and enabling delivery of the strategy.

KE Concordat Action Plan

The KE Concordat requires institutions to identify priority actions through self-assessment, where we will prioritise development and improvement. Our Concordat focuses on the following priority areas:

- Public Engagement
- KE Contracts and Business Processes
- Reward and Recognition
- KE Professional and Academic Training
- Evaluation of Performance and Continuous Improvement

Our KE Strategy has five key themes which reflect the KEF Metrics perspectives designed to frame and encompass “what we do/deliver” through KE activities, namely Regional Growth and Regeneration; Research Partnerships; Intellectual Property and Commercialisation; Skills, Enterprise and Entrepreneurship; and Public and Community Engagement. The eight KE Concordat principles, addressing “how we do/deliver” from a practice, process and policy perspective, are addressed by and throughout this strategy.



Impact Acceleration Accounts

The University has secured two Impact Acceleration Account (IAA) Awards from the Engineering and Physical Sciences Research Council (EPSRC) and the Arts and Humanities Research Council (AHRC). These are highly significant awards, reflecting the growth in our institutional research portfolio – both its quality and volume, and create a major opportunity to accelerate the impact of this on society and industry.

These IAAs will provide a huge impetus to our knowledge exchange activities in these broad AHRC and EPSRC research areas. They will support capability and capacity building as well as directly supporting activities and projects to advance and accelerate the development and delivery of impact. Furthermore they allow us to respond to impact opportunities in more flexible, responsive and creative ways.

Leadership and Governance

The University's Leadership values KE alongside teaching and research as a vital component of our purpose. The institution can trace its origins to 1841 and the Young Men's Mental Improvement Society, soon renamed the Mechanics' Institute. The forming of the Female Educational Institute, one of the first of its kind in the country soon followed, and together the two Institutes are the direct precursors of today's University of Huddersfield. This heritage underpins our purpose and mission today. Our now globally recognised institution remains strongly vocational, and our research strengths and public engagement activities continue to be highly connected to industry and community relationships.

In 2019, Professor Bob Cryan CBE was presented for the second time in 10 years, with the *Examiner Business Person of the Year* award for his success in achieving a global outlook and reputation for the University as well as his tireless work as a champion of the regional economy, benefitting not just the town but West Yorkshire as a whole.

The lead role for KE within the VC Executive Group sits with the Pro Vice-Chancellor for Research, who oversees a team of Enterprise and KE professionals led by the Director of Research, Innovation and Knowledge Exchange (RIKE). The professional staff work closely with academic leads for Enterprise and Knowledge Exchange, alongside Associate Directors for RIKE, as well as Business Development teams and Directors of External Engagement, in each of our six Schools, to drive forward the KE objectives.

The University Knowledge Exchange Group (UKEG) meets to oversee the KE Framework including the development and implementation of this KE Strategy. UKEG reports via the University Research Committee to Senate, where all strategic matters are ratified.

The University Senior Leadership Team, where all Deans and Directors are represented, is fully engaged with KE matters and receives regular reports on progress towards KPIs, as well as contributing directly to KE strategy development.



Dr Nick Lancaster, BSc, MSc, PhD, FRSA Director of Research, Innovation and Knowledge Exchange



“The University of Huddersfield is committed to a dynamic and proactive KE Strategy, which supports our ambition to be an inspiring, innovative University of international renown. We have great strengths in working with industry and end users to create powerful impacts on society and the economy, as will be evident from the examples showcased in this document. I am proud of my academic and professional colleagues for their dedication to achieving our aims for regional regeneration, research partnerships, IP and commercialisation, skills, enterprise and public engagement.”

Professor Bob Cryan, CBE DL CMgr CCMi FEng
Vice-Chancellor and Chief Executive

Culture

The culture of the institution is one of devolved responsibility, whereby academics and relevant staff are supported and empowered to develop links with industry, global research partners and local/regional organisations where we can add value and improve the prospects of our graduates, citizens, civil society, stakeholders and business community.

We have a strong vocational focus in many of our degree programmes and as such have exceptional relationships with local and combined authorities, regional health trusts and education providers. Our strengths in computing, engineering, science and business management have an industrial focus. The culture is enriched by strong external engagement which builds trust and generates opportunities for our students and researchers.

We have pioneered the Global Professional Award (GPA) since 2019, which embeds enterprise, employability, social action and civic engagement into all our degree programmes and encourages our staff and students to have an enterprising mind-set and openness to innovative, team-based collaboration beyond their core discipline.

Recognition and validation of this culture has been awarded by numerous external bodies. For example the institution was shortlisted for The Times Higher Knowledge Exchange/Transfer Initiative of the Year 2019. The Queen’s Anniversary Prize is the highest national honour award for UK higher education was granted by Her Majesty the Queen to the University’s Centre for Precision Technologies in 2021. The Award recognises outstanding work by UK universities that shows quality and innovation and that delivers real benefit to the wider world.

Recognition

The University encourages progression routes for academic staff which recognise and value enterprise, and increasingly, public engagement.

The Conferment criteria for progression have equal status routes for teaching, research and enterprise which enable academics with proactive enterprise, public engagement and KE portfolios to attain promotion to Reader status as Principal Enterprise Fellows.

The University has held the HR Excellence in Research award for its long-term commitment to the career development of its researchers since 2011, and its renewal was confirmed in 2022.

Recognition is given to staff engaged in enterprise and KE through regular case studies and success stories featured on the University intranet, press and social media channels, as well as citation in University news updates to managers and staff. Various School-based reward and recognition activities are also promoted and include Business Partnership Dinners.

Capacity Building and Continuous Improvement

We will, as reflected in our response to the KE Concordat, review and commit to develop our capacity building activities and support for academic and professional service colleagues. In tandem with developing capacity across our institution, we also commit to review and evaluate our activities and building on this seek to continuously improve our performance. We will:

- Evaluate our internal capacity building and staff development activities against sector best practice
- Develop a formal approach to develop, share, adopt and implement continuous improvement practice and process, using benchmarks to inform the development and adoption of continuous improvement and so become more effective
- Undertake regular institutional and collective monitoring and review of our strengthening KE performance using the KE concordat framework.

Dr Eddie (Liz) Dobson

Since 2007, Dr Eddie (Liz) Dobson has undertaken research in the fields of creativity, education, social psychology, and music production. They have developed extra-curricular practices that foster creative enterprise, including CollabHub, where creatives pitch ideas for collaboration, and The Yorkshire Sound Women Network C.I.C., which inspires and enables women, girls and minority gender people to explore sound and music technology in Yorkshire and beyond. Through their commitment to supporting girls in music technology, Dr Dobson has been fundraising and delivering workshops and summer schools, partnering with Sound and Music, and employing internationally established sound artists to teach and work with girls across a wide range of science and music activities. Dr Dobson has delivered eight academic and industry conferences that focus on building bridges for collaboration and knowledge transfer amongst people from diverse communities. They were promoted to Principal Enterprise Fellow in 2018.



Regional Growth and Regeneration

OVERVIEW

The University is a proactive anchor institution supporting regional growth and regeneration, whether within its local authority area of Kirklees, the neighbouring districts of Calderdale and Wakefield (HE cold spots) or in the wider West Yorkshire/Leeds City Region Local Enterprise Partnership (LCR LEP) area. It is also an active member of Yorkshire Universities covering the entire region.

As a Civic University, the institution has strong collaborative links with local authority partners addressing key regional priorities identified in the UK government's 'levelling up' agenda, ranging from economic regeneration to social cohesion, health, and public engagement activities that enhance pride and connection to local communities.

Working in partnership with key stakeholders and anchor institutions across the region, the University plays pivotal role in coordinating, connecting, and enhancing the 'educational pipeline' to support the strategic development of local and regional knowledge economies and graduate retention. We are active members of several groups active across these areas including the Kirklees Economic Strategy Partnership, the Huddersfield Blueprint Town Centre Partnership, Sustainable Huddersfield and Kirklees Health and Social Care Partnership.

The University has acquired a major expansion site from the Council, which will house our new Health Innovation Campus, a key flagship asset in the local economic development corridor stretching from Station to Stadium. We are a member of Huddersfield Unlimited, a public-private partnership dedicated to promoting the town of Huddersfield to increase business investment. The University is represented on the Mayoral Combined Authority and LEP committees including those for Employment and Skills; and Business, Economy and Innovation.

We play an active role in shaping policy and delivery in these arenas, as well as in the West Yorkshire academic policy advisory forum Place-based Economic Recovery Network (PERN) and the Yorkshire Universities Policy and Communications Network.

We contribute actively to discussions with senior local authority leaders to support evidence-based policy-making in addressing the challenges of 'levelling up' across our region and nationally. As an institution with deep industrial networks and collaborations, we have developed a strong capability for supply chain and productivity improvement, targeted at the region's engineering and manufacturing base. We will continue to play an active role in regional growth and regeneration, supporting innovation, skills, productivity and enterprise plans, as well as place-based recovery strategies for our communities.

LCR Supply Chain Project

Associated Utility Supplies Ltd had strategic demand for growth; the Supply Chain Programme identified a range of areas to support this, including a 3-year growth plan covering financials, operations, people, sales and marketing, an action plan for 12 months, and a customer journey mapping exercise covering all aspects of the business.



Artist's Impression: Health Innovation Campus, Southgate, Huddersfield



NATIONAL HEALTH INNOVATION CAMPUS

The Health Innovation Campus (HIC) is a transformative project for the people of the region. Improving health and wellbeing outcomes for individuals and communities will be the primary strategic focus of HIC in addition to monitoring the impacts and effectiveness on economic prosperity and productivity of the region.

HIC will lead innovation in healthcare and wellbeing for the North of England and has strong foundations based on the University of Huddersfield's outstanding track-record in professional courses and pioneering research. The University has a wide network of partnerships with leading health and care organisations, led through a new Health and Wellbeing Academy. Partnership working is considered critically important to support the delivery of the ambitious HIC vision.

The campus will deliver step-changes in workforce development; health, wellbeing and inclusion outcomes; economic prosperity and regeneration outcomes through innovation and partnership working.

KEY OBJECTIVES

- Become a focus for productivity improvement, impact, and enterprise
- Contribute to the Kirklees and West Yorkshire/Leeds City Region economic strategies
- Expand our links with regional businesses and end users, both for graduate employment opportunities and research partnerships
- Contribute to place-based recovery plans to help those disadvantaged communities and people in our region

OUTLINE PLANS

Working with Business

Business engagement is important to the University and RIKE is the gateway to the University's support for businesses, especially in relation to the government's grand challenges which include: Artificial intelligence and data; Ageing society; Clean growth and Future of mobility. We connect businesses with university expertise and talent to enable innovation, research and development. We currently run two European funded business support programmes, engaging with businesses across the West Yorkshire region to understand their needs and aspirations for growth.

We manage the following:

- Leeds City Region LEP Supply Chain Programme
- Leeds City Region LEP Manufacturing Champions Programme (High Growth Businesses)

In addition, the University is a delivery partner in the Advanced Machinery and Productivity Institute in Rochdale.

Typically, the project engages with around 250 businesses each year, predominantly in the manufacturing and engineering industry sectors.

Civic University Agreement

In 2019, the UK Government pledged to strengthen the civic role of higher education institutions, and boost their social contribution to local and regional communities. Since then, the Civic University Network and the Civic University Agreement approach have been developed.

Our approach, whilst recognising the huge range of activity colleagues undertake with partners, has been to identify and respond to the big economic, social and environment issues of the time; and identify how we can also develop in a meaningful way our role as an Anchor Institution in the city region economy.

In the last 12 months significant progress has been made on our Low Carbon aspirations and we are collaborating with a number of national, regional and local partners to develop a programme of activity to help offset our Carbon we produce as an Institution; provide Academic support on aspects of biodiversity with regards to upland tree planting; and to assist with Community Tree Planting within the Kirklees District. We have also worked closely with the Mayoral Combined Authority to help develop their Fair Work Charter.

Responding to Covid-19

The University of Huddersfield responded to the pandemic by providing dedicated research and knowledge exchange funding to projects and actions that addressed societal, health and business needs. Some of the projects delivered included: A safe and just local food system; Covid-19 and its impact on ethnic minority microbusinesses, and Covid-19 and the financial exclusion of the elderly in the UK.

Mothers in Lockdown Case Study

An online exhibition arising from research by Dr Jim Reid at the **Huddersfield Centre for Research in Education and Society** and developed in collaboration with the Thackray Museum of Medicine in Leeds. **The exhibition** was developed to make visible the stories of women who felt they had no voice in the public discourse about the pandemic and to engage non-academic end users with the research.



Mothers in Lockdown – Claire
Portrait artist: Fran Monks

Business Development

A core network of Business Development Managers (BDMs) is located across Schools and centrally, supporting researchers engaged in Knowledge Exchange and the development and delivery of these activities. The blend of more generic central and expert 'subject' devolved support facilitates rapid triage and access to relevant expert knowledge. The activities of BDMs promote and support engagement with external employers and organisations regardless of geography, sector or size.

3M Buckley Innovation Centre (3M BIC)

The University's 3M Buckley Innovation Centre offers workspace to small and growing companies, situated alongside the Campus to promote strong connections for knowledge exchange. The centre has a distinctive technology and innovation offer, enhanced by the Huddersfield Innovation and Incubation Project with Local Growth funding.

This has resulted in extensive advanced technology facilities situated on 'Innovation Avenue' for use by tenants and companies across the region. These include 3D printing capabilities ranging from polymer to stainless steel and titanium, offering insight into latest additive manufacturing techniques, backed up by state-of-the-art X-ray CT and a Zeiss Microscopy Suite. Facilities include research and development laboratories on-site for businesses, product design and prototyping support, to help more companies with diversification and technology adoption projects, supported by innovation vouchers to help entrepreneurs and micro firms realise their ideas.

The University's Enterprise Hub is co-located in 3M BIC to promote linkages across the innovation eco-system between businesses, entrepreneurial students and University staff.

More recently, the centre's conferencing and training facilities are the home for the Sir George Buckley Leadership Centre and it is planned to increase the number of businesses participating in leadership and management programmes.

3M BIC Company Case Study

Adventoris is an innovative software company specialising in the development of ground-breaking mobile business software. Its flagship customisable SwiftCloud business-to-business app for wholesalers and their trade customers streamlines sales, ordering and communication processes. Adventoris has been a part of the 3M BIC since 2013 and now has 170 national and international clients on its books. In 2021, its total revenue was up by 45% and over half a million orders went through SwiftCloud apps with a combined total of £0.3bn and over 50,000 active users.



The 3M Buckley Innovation Centre



Kirklees Top 100 Companies

The University and 3M BIC have developed a new initiative in partnership with Kirklees Council and the Huddersfield Examiner, to showcase the top local companies in a distinctive brochure and online community.



The listing is produced by the Huddersfield Business School and launched at an exclusive event for the Top 100. Subsequent events and networking opportunities take place to develop a sense of community between the top companies, and to strengthen strategic relationships between the companies and the University. Our plans are to develop closer relationships with the companies most likely to benefit from a range of University support, including student projects, graduate employment, leadership and management, continuing professional development (CPD), KTPs and other research and development collaborations.

The project helps to promote the district to inward investors and contributes to regional regeneration priorities. From 2022, an annual event will be hosted to enable face-to-face networking. It incorporates an Innovation Spotlight, recognising the potential of smaller, equity backed small and medium-sized enterprises (SMEs). We have established a peer-to-peer 'Talent Group' of HR directors and managers who meet regularly to discuss issues of common interest and share best practice.

WY Innovation Festival

The West Yorkshire Innovation Festival is a series of virtual events hosted by several partner organisations, allowing businesses and universities across West Yorkshire the opportunity to contribute to the economic recovery by learning to become more productive, innovative and resilient.



KEY ENABLERS

Several enablers will underpin the effective development of our role in regional inclusive growth and regeneration:

- Representation within the key regional and local fora, across a range of economic, public, 3rd sector and community settings.
- Close collaborative relationship with Kirklees Council, adjacent councils, Leeds City Region and Mayoral Office.
- Effective co-ordination of business engagement resources including those within the central Enterprise and KE function, Careers and Employability and across the Schools.
- Proactive targeting of priority sectors and effective usage of our combined regional intelligence.
- Evaluation of the impact of existing regional business engagement programmes and continuous improvement to shape future successor programmes.

MEASUREMENT

- Formal links with 5000 businesses and end users
- 15% of research outputs created with research end users

Research Partnerships

OVERVIEW

Areas of Strategic Research Importance (ASRI) are a key focus of the University Research Strategy. The ASRIs are a method for identifying current and future research capabilities of the University and are thus a strong guide to the priorities of the institution. Many ASRIs are multi-disciplinary in nature and have footprints across the research domains. ASRIs have been constituted to address key national and global challenges, eg climate change.

In addition, ASRIs often reflect the move towards sector convergence, shifting the focus from individual products to cross-industry value experiences. Convergence represents the most fundamental growth opportunity for the University and its research and innovation activities, offering an opportunity to deliver multi-disciplinary solutions to societal and industrial needs, combining strengths across a range of domains.

Our KE Strategy seeks to increase opportunities for all our researchers to develop their work in collaboration with public, private/industrial partners to increase the volume, value, and impact of our research.

KEY OBJECTIVES

- Increase our research and knowledge exchange income
- Drive and support the development of our ASRIs through collaborative research and partnership
- Grow the number and value of research partnerships/projects with external stakeholders
- Achieve top ten ranking for number of Knowledge Transfer Partnerships
- Academics advancing thought-leadership, working in-depth with businesses to co-author publications

The University's ASRIs are:

- | | |
|---------------------------|--------------|
| • Engineering Systems | • Security |
| • Data Science | • Creativity |
| • Productivity | • Health |
| • Materials | • Wellbeing |
| • Sustainable Environment | |

Paxman Scalp Cooling Research Centre

The Paxman Scalp Cooling Research Centre is a multi-disciplinary centre undertaking fundamental and applied research across key aspects of scalp cooling, used to minimise the distressing side-effect of hair loss during chemotherapy in patients.



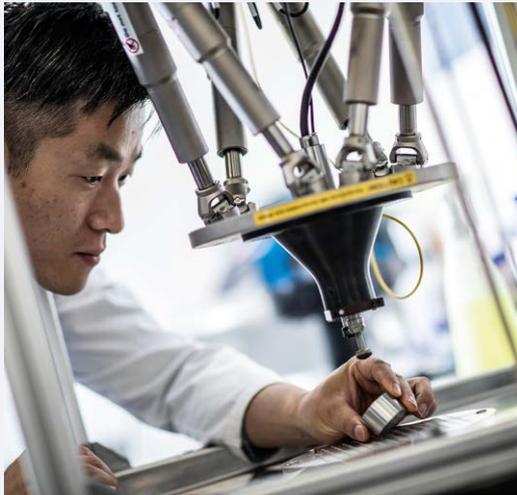
OUTLINE PLANS

Research Collaboration

ASRIs Focus – align and coalesce central resources and internal funding (including the University Research Fund and Collaborative Ventures Fund) to support ASRIs focussing on topics that develop work and partnerships which clearly align with local, regional and national strategic societal and industrial priorities and wider global challenges.

Centre for Precision Technologies

The Centre for Precision Technologies (CPT) is an international centre of excellence in cutting edge metrology research and the development of new measurement techniques. Working with industry it solves real-world manufacturing problems through precision engineering. Led by Professor Dame Jane Jiang, CPT hosts the EPSRC Future Metrology Hub with a vision to transform the UK's manufacturing performance by delivering significant improvements in the speed, accuracy and cost of measurement.



Railway Engineering and Safety

The Institute of Railway Research (IRR) within the School of Computing and Engineering at The University of Huddersfield is a world leading centre in the field of applied railway engineering and risk. Working with industry and academic partners and organisations the IRR is directly improving the safety, reliability and performance of the railway system.

Future Fashion Factory

Future Fashion Factory is an industry-led research and development programme which will deliver exciting new creative innovation opportunities, new products, shorter product development and design lead times, reduced costs, and increased global industrial competitiveness and productivity. It is a 5-year, £5.4m project funded by the Creative Industries Clusters Programme (CICP), which is part of the UK Government's Industrial Strategy.



Professor Parik Goswami, Director of the Technical Textiles Research Centre



Hansard at Huddersfield

The Hansard at Huddersfield web application offers new ways of exploring debates from both Houses of Parliament, helping policy-makers and researchers highlight, visualise and interpret trends and thematic patterns. The project was developed with end-users including researchers from political parties, pressure groups, local authorities, think tanks and academics. It was funded by the Arts and Humanities Research Council, with a new phase funded by Parliament in 2021.



Mental Health Support in Heritage and Social Care Settings

Dr Rob Ellis has co-produced exhibitions, a play, and a 'Bag of Tricks' resource for mental health and social care practitioners from his research about stigma surrounding mental health and the role of patient voice in the development of policy and practice in heritage and social care settings. The resource kit has been introduced via workshops and used in a number of NHS Trusts and with trainee health and social care professionals in Japan; kits with Japanese translations were distributed to organisations in Osaka and Tokyo in summer 2020.

Leading research collaboration with Huddersfield Town Football Club

This project focuses on the effectiveness of management of sponsorship partnerships, and the findings have been used to inform the Club's strategic marketing planning, in particular around partnership management. Additionally, the collaboration has led to a research paper, which we aim to publish in a highly rated academic journal.



The University will prioritise the following actions in the short to medium term:

Intelligence and Policy Influencing – to assist in the process of accelerating knowledge exchange process and to strengthen the capabilities of the University’s ASRIs, resources will be directed towards gathering and presenting a compelling evidence base for investment and collaboration. This evidence will be used to influence public / industrial research policy and priorities.

Knowledge Transfer Partnerships (KTPs) – KTPs are an established and validated approach to support university – business/organisation collaboration. As such, we seek to expand our portfolio of KTP provision both in number and disciplinary spread. Based on sector best practice, we have reorganised the KTP provision structure and launched the KTP Management Team. This approach will support, drive and co-ordinate the development and delivery of our stretching KTP ambition.

KTP with Pendle Polymer Engineering Ltd

The University worked with Pendle Polymer Engineering Ltd, with academic leadership from Professor John Allport, to complete a highly successful KTP project in 2022. The project aimed to embed a thorough understanding of the behaviour of elastomers to improve the design and manufacturing process, and enhance the performance and durability of their products supplied to the automotive and industrial sectors. These aims were achieved, reducing prototyping costs and time to market. The KTP Associate also helped to develop an in-house consultancy, enabling the company to lead the way in their field. The Associate is now working for the company full time, and Innovate UK have graded this KTP as ‘Outstanding’; the highest grade available. The University will embark on another KTP with Pendle Polymer Engineering in 2022, further applying the knowledge gained from the previous project to their product range.



Networks – The University will take a proactive and co-ordinated approach to local, regional, national and international networking. The University will engage in networks to facilitate dissemination and sharing of excellence through knowledge exchange, and also catalyse the creation of new research and innovation collaborations and partnerships. These Networks will be aligned to Industrial Strategy and Global Challenge themes. Examples of this are:

- The establishment of the Northern Rail Innovation Network by the University bringing together industry and academia.
- The [Yorkshire Urban and Rural Social Work Partnership](#) a partnership between four local authorities and two universities in West and North Yorkshire, working collaboratively to deliver inspirational research, education and training that leads to high quality social work.
- Membership of the University Policy Engagement Network (UPEN).

Artificial Intelligence in Health

A collaboration between leading Clinicians and the Centre of Artificial Intelligence for Mental Health is close to making a huge impact on patients’ lives. Using Artificial Intelligence (AI) to support rapid assessment and diagnosis of the complex condition of Adult ADHD will enable faster diagnosis and access to treatment. Waiting times for diagnosis are currently up to 2 years with numbers increasing.



International Collaborative Research

International Partnerships – the University will continue to promote the expansion of its global networks and partnerships. The University will use its Strategic Partnerships Fund to support the development of meaningful and productive long-term collaborations with international partners.

Forest Enterprise

Working with an Ethiopian Ethio-Wetlands and Natural Resources Association (NGO) partner and local universities over the last 18 years, our research in rural communities has led to a devolved approach to forest management now adopted by Ethiopia's Southern Region government. A range of forest-based enterprises, focused on honey, coffee and spices, have been supported, with women entrepreneurs breaking the traditional stereotype. As a result, these ecologically important forests are becoming a competitive and sustainable economic resource.



Wetland Livelihoods

Partnering with international NGOs Wetland Action and Self-Help Africa, field research in five African countries has led to the development of the Functional Landscape Approach which supports profitable and sustainable management of seasonal wetlands. This work has helped improve diets and reduced child stunting in poor rural communities. International trade in some of these crops, such as onions, has also grown rapidly, generating capital for enterprise diversification. The research findings have supported new wetland policies in Zambia and Ethiopia.



Advancing Sustainable Urban Mobility Planning

Dr Alexandros Nikitas's study discussed how bicycling, bike-sharing and walking school bus research has guided authorities in twelve Greek cities, including Athens, to develop their EU-funded Sustainable Urban Mobility Plans (SUMPs) so that around 5m people could benefit from policy changes initiated to support more sustainable travel behaviour uptake. The research and its applications as a policy guidance tool have been adopted by The Hellenic Ministry of Environment and Energy.

KEY ENABLERS

Several key enablers will underpin the growth of collaborative research:

- Equitable and supportive policies to encourage, recognise and reward collaborative research activities.
- Effective development and support structures across all disciplines and research areas Arts, Humanities, STEM and Social Sciences.
- Seed fund availability to support fledgling collaborative relationships.
- Proactive Business Development Managers across our Schools.
- A dedicated KTP Management Team.
- Alignment of institutional resources to ASRIs.

MEASUREMENT

- 15% of research outputs created with research end users
- Increase research income to £30m
- Increase number of KTPs – target 25 by 25 and secure Top 10 ranking

IP and Commercialisation

OVERVIEW

Ensuring our scholarly activities deliver and demonstrate impact beyond academia is crucial and a fundamental requirement of funders/stakeholders. A key strand of this impact is delivered through the commercialisation of our expertise, innovations and discoveries.

As an applied research institution, much of our scholarly activity is undertaken with end-users, and is adopted/commercialised through these partners as part of the standard research relationship. As our institutional research portfolio and income grows, so will the volume and quality of our research outputs which will translate into a similar volume and quality increase in commercialisation opportunities. We therefore need to encourage and enable all staff to engage with commercialisation services to evaluate new ideas and developments arising from their research.

CASE STUDY Impact Acceleration Account Commercialisation

The University has secured Impact Acceleration Account (IAA) Awards covering the remit areas of Engineering and Physical Sciences Research Council (EPSRC) and the Arts and Humanities Research Council (AHRC) over three years. A shared theme of activity and support across the IAAs is the commercialisation of our institutional research and expertise – in all forms ranging from IP licensing and consultancy to the creation of social enterprises.

Over the initial three year award period, funding will facilitate increases in invention and opportunity disclosures, their assessment and development, and ultimately progression to license deal, new venture creation through Spin Out, Joint Venture or Social Enterprise.

Professor Andrew Ball quoted **“Our inaugural Impact Acceleration Account awards are a fantastic recognition of the continuing growth in quality and volume of our research and the potential this has to improve the health, wealth and wellbeing of our region, the UK and wider world. These awards will accelerate the conversion of this potential into tangible outcomes”**

KEY OBJECTIVES

- Increase our research and knowledge exchange income
- Specifically develop IP-related value/income
- Upper quartile in KEF Cluster
- REF Impact Case Study – exploitation and commercialisation activity to underpin and enable impact study development

OUTLINE PLANS

The majority of the University’s research priorities (fully described in the University Research Strategy) focus on user oriented/applied research – termed the Pasteur and Edison quadrants. Consequently, researchers routinely engage with end-users within their research activities, and as such a route to adoption of the research outputs and findings is embedded in the research activity. In pure commercialisation terms, in many instances this offers the best ‘route to market’ through the licensing of IP to a market incumbent. In those instances, where this is not appropriate we will support the assessment and exploitation/adoption of IP through the commercialisation pathway.

In terms of specific actions, we will prioritise the following:

Licensing. When and where appropriate we will continue to seek to license IP to partners/market incumbents as the optimum route (speed, risk and cost) to successful exploitation/adoption of our IP.

Proof of Market and Concept. We will continue to develop and refine our commercialisation pathway, ensuring opportunities are evaluated to ensure market need and supporting development through to proof of concept through competitive internal funding.

Accelerators and Innovation Programmes. We will proactively engage with external regional, national and international support programmes such as Royal Academy of Engineering (RAEng) Enterprise Fellowships, ICure, ARC, GrowMedTech and Commercialisation Reactor as proven and valuable resources to support the commercialisation of research and expertise.

Investor Engagement. Building on existing (eg 3MBIC Network) and new opportunities, we will develop strong relationships with the broad investment community to support the development of investable propositions and their subsequent funding and commercial journey.

CASE STUDY Commercialisation Accelerators

The University has and will continue to prioritise engagement with commercialisation accelerators as key instruments in advancing our commercial pipeline volume and quality.

We routinely secure Lean Launch Pad and ICure awards (funded by Innovate UK) which support pre-commercial activities through customer discovery programmes designed using lean start-up methodology. Lean start-up takes the scientific method - hypothesise, test, evaluate and applies it to 'business' ideas. It explores what potential customers think about your idea, product or service which is used to validate and improve the commercial proposition.

Commercialisation Accelerators span disciplinary boundaries. Social sciences, humanities, and the arts for people and economy (SHAPE) disciplines have historically not received the same level of focus, support, and funding for entrepreneurial activity as STEM disciplines. We recognise this and are seeking to address through various approaches – ranging from Impact Acceleration Account activity to targeted support for the ARC Accelerator Awards. The ARC Accelerator helps SHAPE (Social Sciences, Humanities and Arts) academics to develop ideas based on their research into businesses or ventures to help people, society and the economy.

KEY ENABLERS

Several key enablers underpin an effective and high-performing Technology Transfer Office:

- Equitable and supportive Intellectual Property (IP) Policy.
- Transparent and effective practices, procedures and funding for commercialisation activities.
- Seed funding and access to investment, developing better and wider relationships with the early-stage investment community.
- Making use of external accelerators and fellowships eg RAEng, ICure, ASPECT.

CASE STUDY Technology Assignment

Two University research teams were crucial in the development of **Wayland Additive's** novel electron beam additive manufacturing (AM) portfolio which underpins their NeuBeam technology and new Calibur3 machine.

Through collaborative R&D programmes with Wayland Additive, Professor Jaap Van Den Berg's research expertise led to the development of the charge neutralisation technology crucial to preventing excess charge accumulation on the powder bed during Wayland's NeuBeam AM process. In parallel, Professor Liam Blunt and colleagues from the Centre for Precision Technologies developed novel in-process measurement approaches for monitoring the powder bed as components are being built layer by layer. These two strands of collaboration led to several patent applications and an ongoing IP arrangement between the University and Wayland Additive.

Wayland Additive quoted **“Working with world leading research groups at the University of Huddersfield has helped us achieve rapid development and delivery of the key technology for our highly innovative NeuBeam platform”**.



MEASUREMENT

- KE and academic staff training sessions delivered (internal and external)
- Sustained increase of the number of disclosures and active projects in the Commercialisation Pipeline
- Increase income from spin-outs and licensing

Skills, Enterprise and Entrepreneurship

OVERVIEW

Our enterprise work is student focused. Working across the University and with external partners we create awareness of enterprise opportunities and deliver interventions for students to develop their enterprise skills and engage in business start-up either during their studies or after graduation. We build our impact through staged objectives that together create an ecosystem to support skills and start-up potential in our student communities.

We are building an increased skills portfolio beyond our core degree programmes, including degree apprenticeships with a rapidly expanding portfolio - most notably across the various health and care disciplines, CPD partnerships and the new Sir George Buckley Leadership Centre offering CMI accredited leadership and management programmes.

The School of Human and Health Sciences is characterised by its ability and proven track record of developing the health and care workforce of a post-pandemic future. Established CPD partnerships and provision with core employers ensure that the health and care workforce has the skills to innovate in the workplace to build a healthy and well population.

The Huddersfield Business School also contributes to enterprise support programmes for the region, notably the European Structural and Investment Fund AD:Venture programme and ELEVATE programme for Kirklees Council.

KEY OBJECTIVES

To enable all students to become inspiring and enterprising global professionals and achieve career and personal success, by:

- **Enterprise Awareness** – Increasing student and staff awareness of the Enterprise Team services.
- **Application of Enterprise Skills** – Supporting access to enterprise education opportunities for skills development.
- **Entrepreneurship in Action** – Enabling business start-up activity to contribute to the local economy.
- **Entrepreneurial Development** – Creating an entrepreneurial ecosystem for sustainable businesses.
- **Expanding the University's skills offer** for organisations, including degree apprenticeships, CPD and leadership/management programmes.



The Enterprise Team

OUTLINE PLANS

Enterprise and Entrepreneurship

Enterprise Hub

We divide our resources and support between enterprise and entrepreneurship education. We intend that building awareness and giving students the opportunity to practice supports their aspirations and abilities to be entrepreneurial and develop their ventures through ongoing support.

Enterprise Awareness – We have contributed an enterprise learning intervention to the University-wide Global Professional Award (GPA) that enables every first year to reflect on enterprise skills and how these can be applied. In delivering this session we have had the opportunity to reach every first-year student. We plan to increase our enterprise touch points by increasing the number of curriculum sessions, for all disciplines, in areas such as: pitching skills, business planning and business model development. We also offer staff development sessions, to University lecturers to help embed enterprise within modules and skills-based assessments as well as widen the enterprise dialogue within the University. We intend to increase this offer.



Students undertaking GPA activity

Application of Enterprise Skills – Building on our successful Enterprise Workshop Series we have increased the range and reach of our interventions that enable students to enhance and practice their enterprise skills. We now offer ICE+ interventions, where students problem solve real world business issues. Pitch Club is delivered to Enterprise Placement Year (EPY) and GPA students to help raise competence and confidence in getting business ideas across to potential customers and clients. We are looking to increasing variety of opportunities to students to practice and apply their enterprise skills and we work with Careers Officers and Enterprise and Employability groups to schedule and publicise our services.



ICE+ Workshop

ICE+

Innovation Creative Exchange Plus (ICE+) is an interdisciplinary enterprise initiative providing opportunities for students to engage in challenges posed by external businesses. Recent ICE+ Challenges include working with UK Greetings on looking to an imagined future of the greetings/card industry, and exploring how places and spaces can be made more interactive and accessible via an innovative start-up, Sticky. The total number of challenges covered in the ICE+ project is expected to be around 10, over the two-year project period.

Entrepreneurship in Action – Our current EPY is very successful and is now in its 18th year. We continue to innovate within the programme and engage students in opportunities to refine future delivery. We are seeking ways to develop further including ongoing discussions on enabling the programme to be taken in either year 3, or 4, of undergraduate degree courses, and discussions on a shortened post graduate variant for freelancers.

Entrepreneurial Development – Our existing *Friends of the Enterprise Team* network is comprised of Enterprise Team alumni start-ups, and external businesses and organisations seeking to contribute to the development of emerging student/graduate businesses. Enabling an increase in the number of 'Friends', together with our internal staff CPD and internal and external professional networks, will ensure the Enterprise Hub is best placed to nurture sustainable businesses and enterprising students and graduates.

Skills

Skills & CPD Programmes

The University is developing its skills and CPD portfolio, responding to employer and societal needs and opportunities. Degree Apprenticeships, CPD partnerships and the new Sir George Buckley Leadership Centre offering CMI accredited leadership and management programmes reflect this change and growth. Huddersfield Business School has successfully launched the Help to Grow programme backed by HM Government.

Degree Apprenticeships

As the University has a long history of delivering high quality vocational programmes, we have expanded our offer based on the skills needs of local business employers, and the NHS and healthcare partners.

Our health-related apprenticeship programmes are workforce-led and are co-developed with our NHS

partners. Our business-related programmes are developed based on regional skills needs.

The University works with over 90 employers to deliver high quality learning to over 800 of their employees. The University has expanded its offer to include degree apprenticeships across a variety of sectors and levels. In 2021, we continued to embrace the value of apprentice learning and expanded our apprenticeship provision further by offering the Physiotherapy Level 6 apprenticeship and the Occupational Therapist Level 6 apprenticeship in response to the skills needs of our NHS partners. In 2022, we will be introducing the Midwifery Level 6 apprenticeship. Huddersfield Business School has developed a range of degree apprenticeships for leadership and management, as well as a range of combined degrees (with enterprise/entrepreneurship).

Nursing Degree Apprenticeships

The University offers a number of Degree Apprenticeship courses across a range of health professions. These include Advanced Clinical Practice, Nursing, Operating Department Practice, Paramedic Science and Podiatry. Apprentices spend most of their time at work, whilst also attending University, so they get to work, earn, learn and progress at the same time. We currently have over 400 students on nursing degree apprenticeships.



Sir George Buckley Leadership Centre

Launched in 2021 and named in honour of the current Chancellor, the University's new Leadership Centre is aimed at developing leadership and management skills for SMEs, larger companies, and public sector organisations. In partnership with Huddersfield Business School, we will offer a range of leadership programmes, degree apprenticeships and executive education.



Sir George Buckley

KEY ENABLERS

- **Policy and Process** – The Enterprise Hub's location within the 3M BIC enables the Enterprise Team and our clients to be located within a network of more established businesses and grow-on opportunities. Our external professional network includes EEUK and ISBE. We liaise with Academic Schools and staff through University and School Enterprise and Employability Groups. We set targets at a School level to ensure that enterprise education is aligned to different student group needs in terms of industry context and level of learning.
- **Engagement** – The GPA (Global Professional Award) provides an opportunity to develop transferable skills as soon as students join the University. Enterprise is one strand of the learning agenda and we have designed interventions for students to undertake group tasks as well as reflect on their own potential to use enterprise skills and pursue entrepreneurial opportunities, over 3 years.
- **Capacity Building** – Continuing engagement with our Enterprise Team alumni (Friends of the Enterprise Team Network) ensures our service looks beyond start-up and towards sustainable businesses. Engaging alumni in our service delivery enables further KE activity and a rich business support network.
- **Continuous Improvement** – The Enterprise Team staff has a diverse range of existing skills and knowledge, and also undertake regular CPD to enhance our in-house offer to students and graduates. Current development includes several PhDs and MRes in progress, and further EEUK Fellowships.

Improving Leadership Learning, Practice and Diversity in the Government Communication Service

The Government Communication Service has worked with Professors Gregory and Bills for many years, more recently to deliver a bespoke Master's programme co-created with the Cabinet Office and senior civil servants. This is part of wide-ranging leadership development programme for communicators across government which includes a model, formulated by their research, to enhance the participants' strategic impact in a complex public policy environment.

MEASUREMENT

- Number of start-ups
- Increasing value of commercial CPD income

Public and Community Engagement

OVERVIEW

Engaging with citizens, communities, and organisations outside of the University has never been more important and is integral to our responsibilities as a Civic University, as well as to our funders and key stakeholders. Our civic mission is to enrich and enhance the quality of life and develop the pride in local communities across West Yorkshire and further afield.

By achieving an Engage Watermark : Bronze in 2021, and through the development of a Public Engagement Strategy, the University is making significant steps towards formalising the structures that underpin Public and Community Engagement. These processes will in time develop new Key Performance Indicators and evaluative tools.

Increasing Public Access to the Campus

The University has invested in major projects to bring communities onto the campus. Heritage Quay, the Holocaust Exhibition and Learning Centre, and Sovereign Design House all provide space for the public to engage, for research outputs to be exhibited, and places for conversations and collaborations.



Heritage Quay

'Radicalisation'

A national initiative to help spot early signs of radicalisation or possible involvement in terrorism is directly acting upon years of research by University of Huddersfield academics. The Counter Terrorism Policing's digital Prevent campaign has drawn on the research of Professor Paul Thomas, Professor of Youth and Policy in the School of Education and Professional Development.

KEY OBJECTIVES

- Deliver the Engage Watermark: Bronze action plan
- Develop and implement a public engagement strategy
- Support an increase in new research outputs created with research end users
- Align activity with key stakeholders and our Civic University agreement

Temporary Contemporary

This project is an example of our approach to public and community engagement. Working with smaller organisations and Kirklees Council, the Temporary Contemporary network links research and teaching with the priorities of key stakeholders. It also demonstrates the opportunities that can develop from engagement-focused research and practice.



OUTLINE PLANS

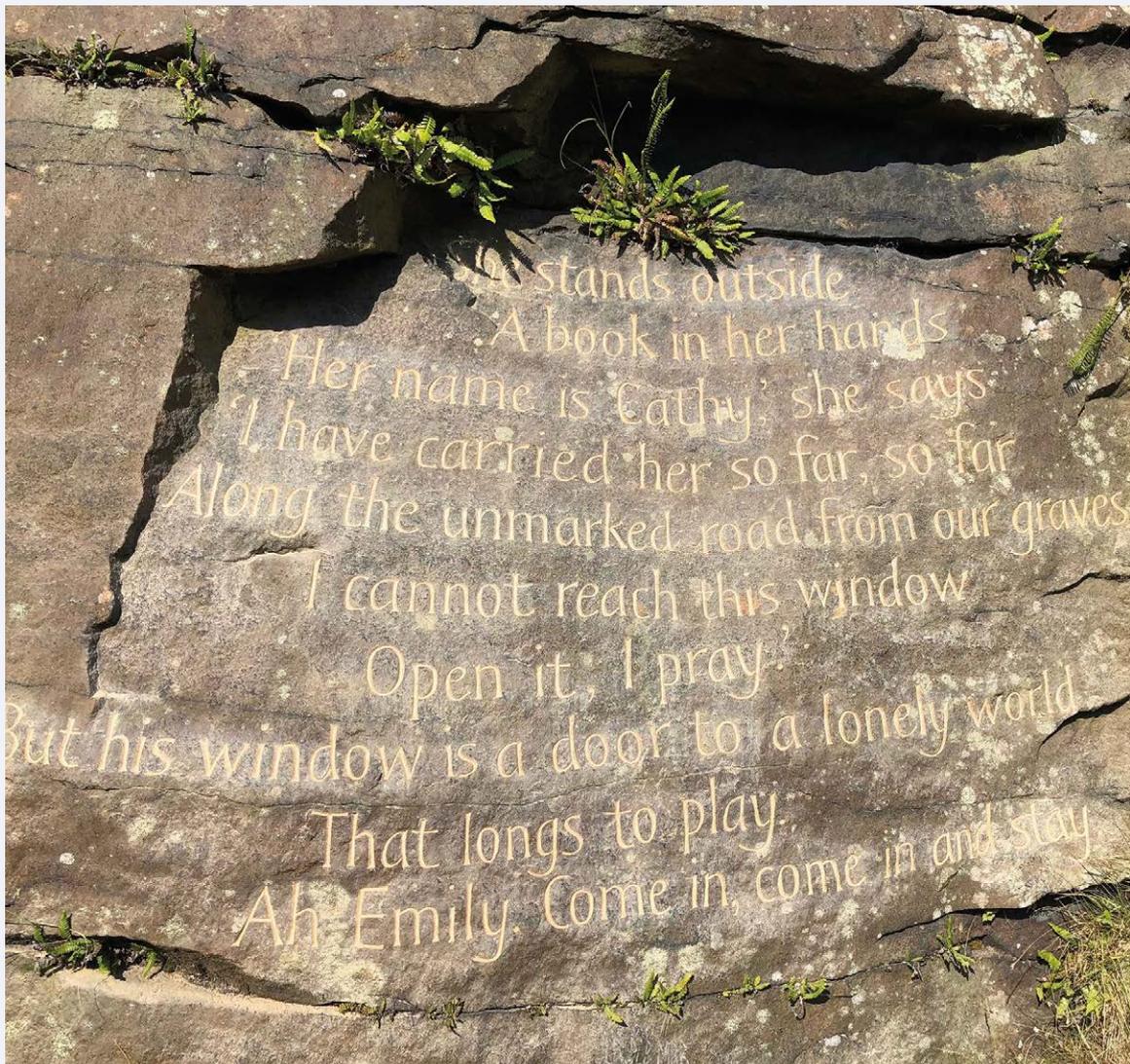
Public Engagement

The focus of work in this area will be to develop the structures and systems to support high quality public engagement. The catalyst will be the Action Plan produced as part of our submission for the Engage Watermark. The Action Plan articulates priority areas for development, the resources required, and outlines how we will create a public engagement strategy. Our key plans are:

- A Public Engagement strategy with robust KPIs.
- New infrastructure and systems to support a strong culture of excellent public and community engagement.
- A clear definition of our communities and publics and how we make them part of our team.

The Brontë Stones

The Brontë Stones project, conceived by Dr Michael Stewart, responds to the need for greater opportunities for cultural and creative participation in an area with pockets of high economic and cultural deprivation. It has increased local engagement with the landscape, regenerated and preserved public rights of ways, and provided a stimulus to cultural tourism by contributing to the quality of the tourist experience. The four stones celebrate the work and vision of the Brontë sisters as impacted by the West Yorkshire landscape. Four original poems were commissioned by recognised international writers: Carol Ann Duffy (Charlotte Stone), Jackie Kay (Anne Stone), Jeanette Winterson (Three Sisters Stone), and Kate Bush (Emily Stone).



The Emily Stone

Kirklees Democracy Commission

The University has worked in partnership with Kirklees Council to enhance public engagement with local democratic participation and place-based working in communities. Politics lecturer, Dr Andy Mycock, chaired the Kirklees Democracy Commission in its initial phase. It took evidence from over one thousand local citizens and a wide range of local and national community groups and civil society stakeholders. The Commission's final report was launched on our campus in 2017, and staff and students continue to collaborate in follow-up projects. The University's Students' Union has led the 'Educating Kirklees' network, which brings together local Further Education colleges and the Kirklees Youth Council to engage with policy-makers and involve more young people in local democracy. Work placement students have supported the introduction of the 'Democracy Friendly Schools' programme across the region.

Health Clinics and Legal Advice for the Public

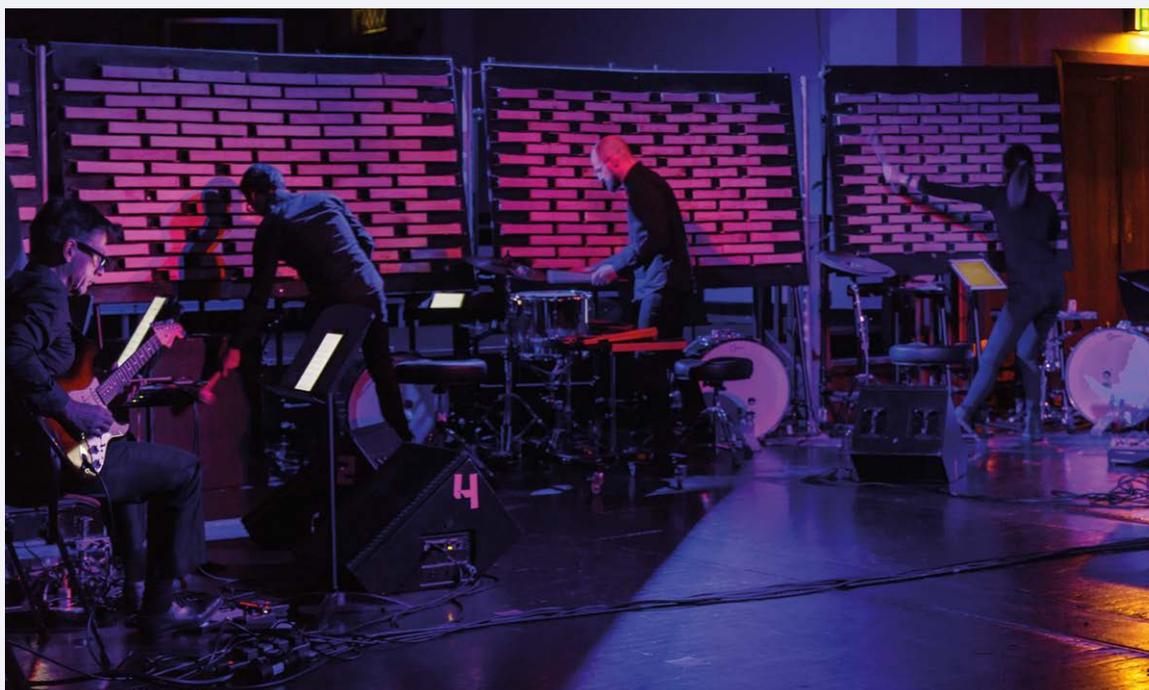
The University offers a range of specialist Health Clinics – Podiatry, Physiotherapy and Ophthalmology for public access and also NHS referrals. The Clinics are staffed by qualified professionals and support the development of vital hands-on clinical skills in our undergraduate and postgraduate trainees. The Law School runs free-to-access student-led Legal Advice Clinic for the public offering free assistance to those who otherwise would have no access to legal help, supporting people who may not qualify for legal aid and those who cannot afford legal advice themselves.



Podiatry Clinic

Huddersfield Contemporary Music Festival

Huddersfield Contemporary Music Festival is supported by the School of Arts and Humanities at the University of Huddersfield. It is a globally-relevant annual event and the UK's largest international festival of new and experimental music. It attracts artists and visitors from around the world to Huddersfield and has featured virtually every major international figures of experimental and new music.



TEMKO + Slagwerk den Haag at hcmf// 2019 © Huddersfield Contemporary Music Festival. Photo by Graham Hardy



Bernardine Evaristo speaking at the festival

Huddersfield Literature Festival

The Huddersfield Literature Festival was established in 2006 by English and Creative Writing at the University. It has grown from these roots to become a significant player in the UK’s literature events calendar, programming 50+ events a year across the town. It has hosted such literary luminaries as: Simon Armitage, Kit De Waal, Joanne Harris, Bernadine Evaristo, Jodie Picoult, Sir Patrick Stewart, Ian Rankin, Kate Atkinson and Irvine Welsh. Every year the festival works closely with the English Department, offering work opportunities to our students. Our students, equipped with this experience, have gone on to secure work for festivals across the country.

WOVEN is a biennial festival, initiated and funded by Kirklees Council, but is owned by everyone, including community groups, textile businesses, cultural and educational organisations, artists and heritage sites across the district. WOVEN’s theme is generations of innovators, connecting a strong heritage with today’s innovative developments in industry, university research, a strong arts and crafts scene and the creative expression of the district’s rich and diverse communities. The University supports a big festival event in June every other year, and long term projects and smaller events in between. The Centre for Cultural Ecologies in Arts and Humanities and Technical Textiles Research Centre work collaboratively with the festival which has led to a range of research and enterprise focused events, including a two day conference called WOVEN in Practice.



KEY ENABLERS

This work will be informed by; the external recognition of the importance of strategic public engagement activity; and internal culture change work.

- The Watermark action plan and Public Engagement Strategy development
- The UKRI Public Engagement strategy
- Formalising of procedures and systems
- Training and capacity building for staff and students
- Clearer routes for external organisations to engage
- Formal recognition of achievement and sharing of what we do
- Criteria for academic conferment include public engagement
- Seed funding and external research grants to support public engagement
- Inaugural and Public Lecture and Seminar Series

MEASUREMENT

Appropriate KPIs and other targets will be developed as part of the public engagement strategy, but we may look to quantify and report on the following areas:

- Watermark achieved by end 2021
- Public engagement strategy developed by end 2022
- Contribution to 15% of research outputs created with research end users
- Increase in staff and students undertaking engagement training

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