

Knowledge Exchange Strategy

2021-2025



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Front Cover Image

A pharmaceutical expert, Dr El Hassanne Larhrib based in the University's School of Applied Sciences, has worked on a project to develop engineered lactose spherical particles. Lactose particles are used in the pharmaceutical industry to carry and deliver drugs used in inhaler devices. Our novel particles have the potential to vastly improve efficacy, able to deliver almost x3 more drug to the lungs than the current gold standard lactose used by the pharmaceutical industry. The project has been supported through [Grow MedTech](#), a collaboration across 6 Yorkshire universities to grow and support the commercialisation of medical technologies.

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, 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.

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.

Through this strategy document we give an accurate representation of the approach and priorities we intend to deliver against, providing clear targets, measures and indicators of their achievement.

KE Concordat Action Plan

The KE Concordat requires institutions to identify priority actions through self-assessment, where we will prioritise development and improvement. Our first submission to the KE Concordat will focus 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.



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 and Enterprise, who oversees a team of Enterprise and KE professionals in the Research and Enterprise Directorate. The professional staff work closely with academic leads for Enterprise and Knowledge Exchange, alongside Associate Directors for Research and Enterprise, as well as Business Development teams and Directors of External Engagement, in each of our six Schools, to drive forward the KE objectives.

The Head of Enterprise and KE convenes the above in the University Knowledge Exchange Group (UKEG) which meets bi-monthly 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.

“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 mid-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 and the Queen's Award for Enterprise Promotion was awarded to Professor Liz Towns-Andrews, reflecting her roles as Director of Research and Enterprise, and CEO of the 3M Buckley Innovation Centre.

Incentives and Rewards

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 of Huddersfield has held the HR Excellence in Research award for its long-term commitment to the career development of its researchers since 2011.

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.

Professor Laura Waters

Laura was promoted to the role of Principal Enterprise Fellow (PEF) in September 2013 to reflect her extensive work in KE related activities. As a PEF, Laura continued to combine her teaching, research and engagement activities including numerous appearances on radio and television, organising science evenings for the public on campus, giving talks at local schools, undertaking international research collaborations, publishing papers, securing industrial funding and contributing to national committees in her field of expertise. In August 2018 Laura was further promoted to the position of Professor of Pharmaceutical Analysis and continues to combine her numerous roles at the University.



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 Recovery Partnership, Town Centre Partnership, Sustainable Huddersfield and Kirklees Health and Social Care Partnership.

The University is acquiring 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. We are also involved in the Globe Innovation Centre, a textile mill conversion in Slaithwaite, now repurposed as a grow-on space due to open in 2021, for companies including those based in our 3M Buckley Innovation Centre.

The University is represented on the Mayoral Combined Authority and LEP committees for employment and skills; business innovation and growth; and the West Yorkshire Innovation Network (WYIN). 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). 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.

NATIONAL HEALTH INNOVATION CAMPUS

The National Health Innovation Campus is a transformative project for the people of the region. It will improve health outcomes and lead innovation in healthcare for the North of England. It is based on the University of Huddersfield's outstanding track-record in professional courses and pioneering research, and its wide network of partnerships with leading health and care organisations, led through a new Health and Wellbeing Academy.

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



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

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 'level up' those disadvantaged communities and people in our region

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.

OUTLINE PLANS

Business Engagement

The University has a well-established regionally focussed business engagement team, the Business Growth and Productivity Service (B-GPS). Through this team, the University runs two European funded business support programmes and one pilot. The B-GPS engages with businesses across the West Yorkshire region to understand their needs and aspirations for growth.

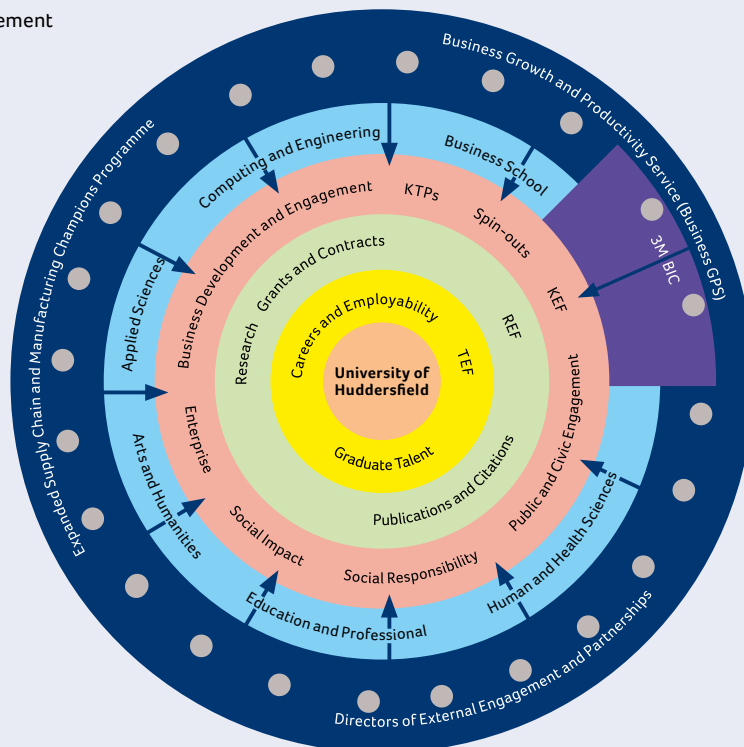
The B-GPS team manages the following:

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

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

Using these contacts and networks, the team connects businesses with Business Development Managers (BDMs) in each of the Schools to join up support, introducing potential clients for Knowledge Transfer Partnerships (KTPs) for example. Typically, the B-GPS team engages with around 250 businesses each year, predominantly in the manufacturing and engineering industry sectors. The team aims to expand into allied sectors, particularly in applied sciences, business management, health, arts and humanities. This is illustrated in the model below.

Model of Business Engagement



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. The University of Huddersfield has chosen to adopt a developmental approach and has scoped out our first Civic University Agreement. 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. The three main areas have been identified and are shown in the below diagram:

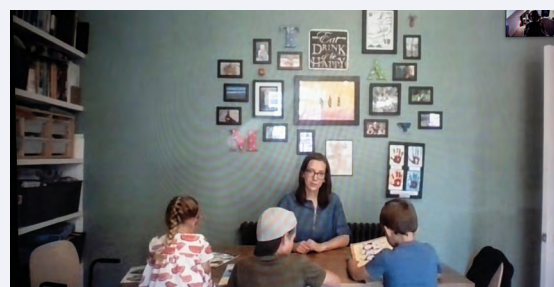


Responding to Covid-19

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



The 3M Buckley Innovation Centre

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.

The University's Enterprise Hub and business engagement team are 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 have become the home for the newly launched Sir George Buckley Leadership Centre (more details later in the strategy) and it is planned to increase the number of businesses participating in leadership and management programmes.

Forward plans also include expansion of the centre's facilities for the application of advanced technology, particularly in relation to the health and med tech sectors, where the region has significant strengths.

The 3M BIC is a founder member of the West Yorkshire Innovation Network and plans to broaden its offer of 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.

3M BIC Company Case Study

Adventoris is an innovative software company specialising in and harnessing the latest technology and e-commerce security developments, their SwiftCloud business-to-business mobile application for wholesalers and their trade customers, ensures that orders are correct and on time and communications are smooth. Adventoris has been a part of the 3M BIC since 2013. Over the last four years it has experienced 100% growth per annum and in 2020 it continued along this trajectory, growing its teams in sales, marketing, software development and implementation, and winning new, and winning new clients at a record pace.



with strong IP led products and services, several of which are based in the 3M BIC.

The University will continue to maintain and expand its use of MS Dynamics as its core customer relationship management (CRM) system to track and co-ordinate business engagement.

WY Innovation Festival

The West Yorkshire Innovation Festival 2021 was a series of virtual events hosted by several partner organisations, allowing businesses across West Yorkshire the opportunity to contribute to the economic recovery by learning to become more productive, efficient 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.
- Embed and expand the use of our Customer Relationship Management systems.
- Evaluation of the impact of existing regional business engagement programmes and continuous improvement to shape future successor programmes.



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 2020 listing was produced by the Huddersfield Business School and launched virtually at an exclusive event for the Top 100. Subsequent events and networking opportunities are planned 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 ‘key account management’ style 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 2021, an annual event will be hosted on campus to enable face-to-face networking. It is also planned to incorporate an Innovation Index feature, recognising the potential of smaller, equity backed small and medium-sized enterprises (SMEs)

MEASUREMENT

- Formal links with 5000 businesses and end users
- 15% of research outputs created with research end users
- Over 500 businesses engaged and supported through regional Supply Chain and Manufacturing Champions programmes

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. As well as facilitating research uptake, such linkages across stakeholders can lead to multi-directional information flow; more holistic appreciation of issues; and the co-creation of knowledge.

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

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

The University of Huddersfield is a large university, with a broad discipline portfolio across Social Science, Arts and Humanities and STEM disciplines generating excellent research across all disciplines. The University has invested in its research with the volume, value and quality of our research showing exceptional growth.

The majority of the University's research priorities ([University Research Strategy](#)) focus on user oriented / applied research – the Pasteur and Edison quadrants. Many of the ASRIs embrace interdisciplinary grand challenges and their key priorities determined by the users of research. This approach spans our broad research spectrum from metrology to social inclusion, linguistics, wound care and beyond. Through this approach, the connection with the social, health and industrial economies and systems of our local and regional geography remains strong.

We recognise that applied research has an important role to play in both social and economic development, as well as contributing to improving quality of life and health. Applied research is invariably enhanced by maximising knowledge exchange, networking, and partnership work. This KES recognises the transformative and impactful effect of active collaboration and encourages co-creation and co-production of research and innovation for public benefit.



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 since 2015

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:

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.

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 Deluxe Beds

Deluxe Beds was a successful Knowledge Transfer Partnership involving the application and embedding of SCRUM, an agile design-oriented approach to project management which relies on constantly recurring feedback to the client, and associated improvement methodologies within a manufacturing organisation. Deluxe Beds achieved cost savings in excess of £1,800,000 in a 24-month period.



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).

School of Computing and Engineering

Researchers based in the centre for Precision Technologies and Ion Beam Centre worked with Reliance Precision, to advance novel technologies for application in the development of next generation additive manufacturing machines which have led to the formation of a spin-out from Reliance Precision – Wayland Additive to commercialise the technologies.

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 (SUMP) 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.

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.



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.



Professor Parik Goswami, Director of the Technical Textiles Research Centre

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.

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.

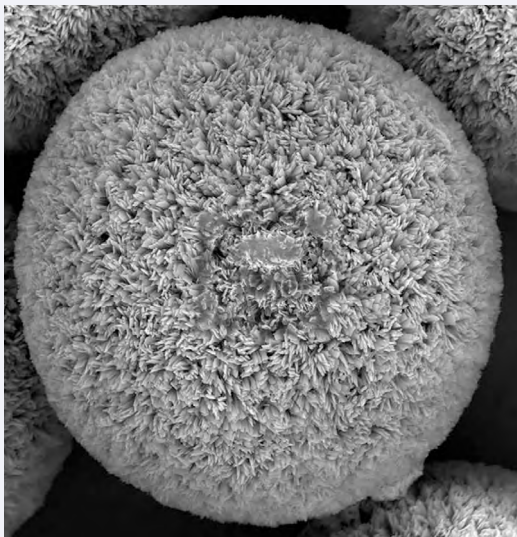
As an applied research institution, much of our scholarly activity is undertaken with end-users, and is adopted/commercialised through these partners as part of the standard research relationship. As our institutional research portfolio and income grows, so will the volume and quality of our research 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

Grow MedTech

The Grow MedTech programme has supported a dedicated Technology Innovation Manager who has worked cross-School to develop over 20 active commercial projects and secured over £350K of income thus far.

Scanning Electron Micrograph of Engineered Lactose spherical particles. These particles, that carry drugs used in inhalers, are able to deliver almost 3 times more drug to the lung than current gold standard lactose used by the pharmaceutical industry.



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
Royal Academy of Engineering (RAEng)
Enterprise Fellowship

The success of Dr Hussam Muhamedsalih in securing our institutions first RAEng Enterprise Fellowship and follow on RAEng Industrial Fellowship has dramatically advanced the commercialisation of novel measurement through financial, mentoring and network support.

This will support the creation of a new spin-out company “Cubit Precision Measurement Ltd” to commercialise new metrology instruments from CPT’s research programmes.



Dr Muhamedsalih successfully completed his Royal Academy of Engineering (RAEng) Enterprise Fellowship, which was a key driver to setting up the spin-out and developing a new multi-wavelength polarising interferometer, one of the first pipeline products that will be commercialised. Cubit Precision Measurement is a recent HiTec start-up company whose area of business operation is developing solutions for in-process surface metrology. Cubit has grown out of the University of Huddersfield’s Future Metrology Hub and will work together on developing and translating novel technologies to industry.

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 SPIN OUT

Simplifai Systems was born from an Innovate UK First of a Kind project to control traffic systems using AI and to provide air quality traffic solutions.

The company became a 3M BIC tenant and engaged the University as the key partner to develop the AI systems. Simplifai Systems has raised significant seed funds to develop the business, with several traffic management authorities already in discussions and initial orders for air quality traffic support from the NHS. The University is now a shareholder and further collaboration is envisaged in developing a demonstrator at the 3M BIC, supporting an Enterprise Fellowship and further collaboration with partners in China in Jiangsu and with Ali-Baba.



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
- External accelerator/fellowships secured
- Impact Case Studies – commercialisation to directly support the development of 10% of future impact studies.

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 eco-system 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 (2020-2021). 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 developing a Corporate Social Responsibility agenda for Gekco, providers of liquid chalk for climbers, and working with Rugby League Cares to develop plans for a new National Rugby League Museum which will be based in Huddersfield.

Entrepreneurship in Action – Our current EPY is very successful and is now in its 17th 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.

Inspiring Digital Enterprise Awards @IDEA

The Inspiring Digital Enterprise Award, known as iDEA is an international award winning programme that helps individuals develop digital, enterprise and employability skills for free. iDEA helps individuals develop skills and showcase achievements, regardless of age or stage. The then Head of Computer Science, Professor Rupert Ward, was seconded to the iDEA team for a year to develop the technological and pedagogical foundations for the programme and our Vice Chancellor, Professor Bob Cryan CBE is the current Chair of the Board of Trustees.

Skills

Skills Programmes

The University is developing its skills 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.

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 60 employers to deliver high quality learning to over 470 of their employees. In 2021, we are continuing to embrace the value of apprentice learning and will be expanding our apprenticeship provision further. From September 2021, we will be offering the Midwifery Level 6 apprenticeship, the Physiotherapy Level 6 apprenticeship and the Occupational Therapist Level 6 apprenticeship in response to the skills needs of our NHS partners.

The University has expanded its offer to include degree apprenticeships across a variety of sectors and levels.

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

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. The centre will run CMI accredited programmes initially at levels 5 and 7, with a focus on blending global insights from Huddersfield Business School with practical application in the workplace. We will provide a commercially-oriented offer, with scope to expand and increase the range of programmes in response to customer demand.

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 new Enterprise Team clients per annum
- Number of Enterprise Placement Year students (and pass rate)
- Number of new businesses (and case studies)
- Number of sustained businesses*
- Number businesses seeking ICE+ Challenges
- Increasing value of commercial CPD income
- Increasing volume and diversity of degree apprenticeships

*definition of sustained = survival for 2 and 3 years

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.

Through an application to the Engage Watermark and 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'

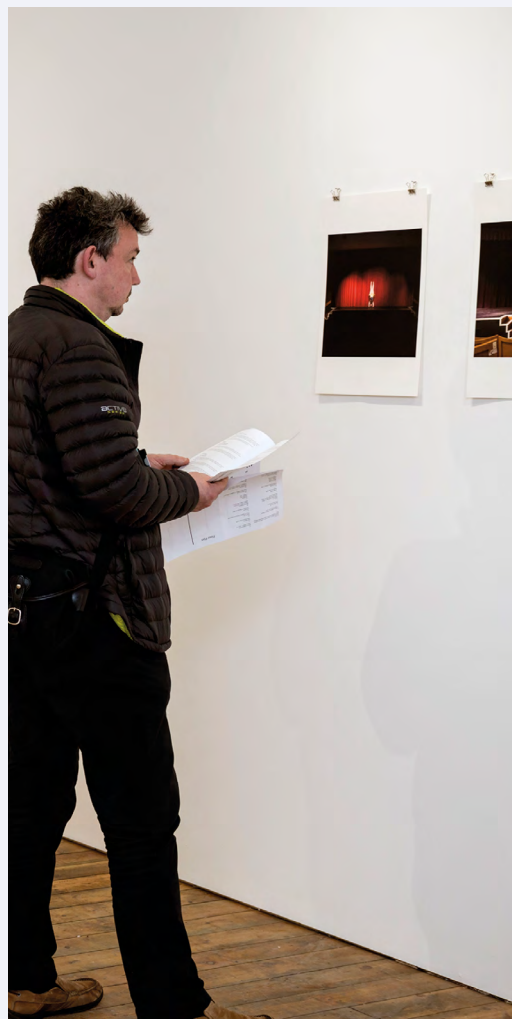
A national initiative to help spot early signs of radicalisation or possible involvement in terrorism is directly acting upon years of research by University of Huddersfield academics. The Counter Terrorism Policing's digital Prevent campaign has drawn on the research of Professor Paul Thomas, Professor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

KEY OBJECTIVES

- Achieve Engage Watermark: Bronze in 2021 and deliver the associated 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

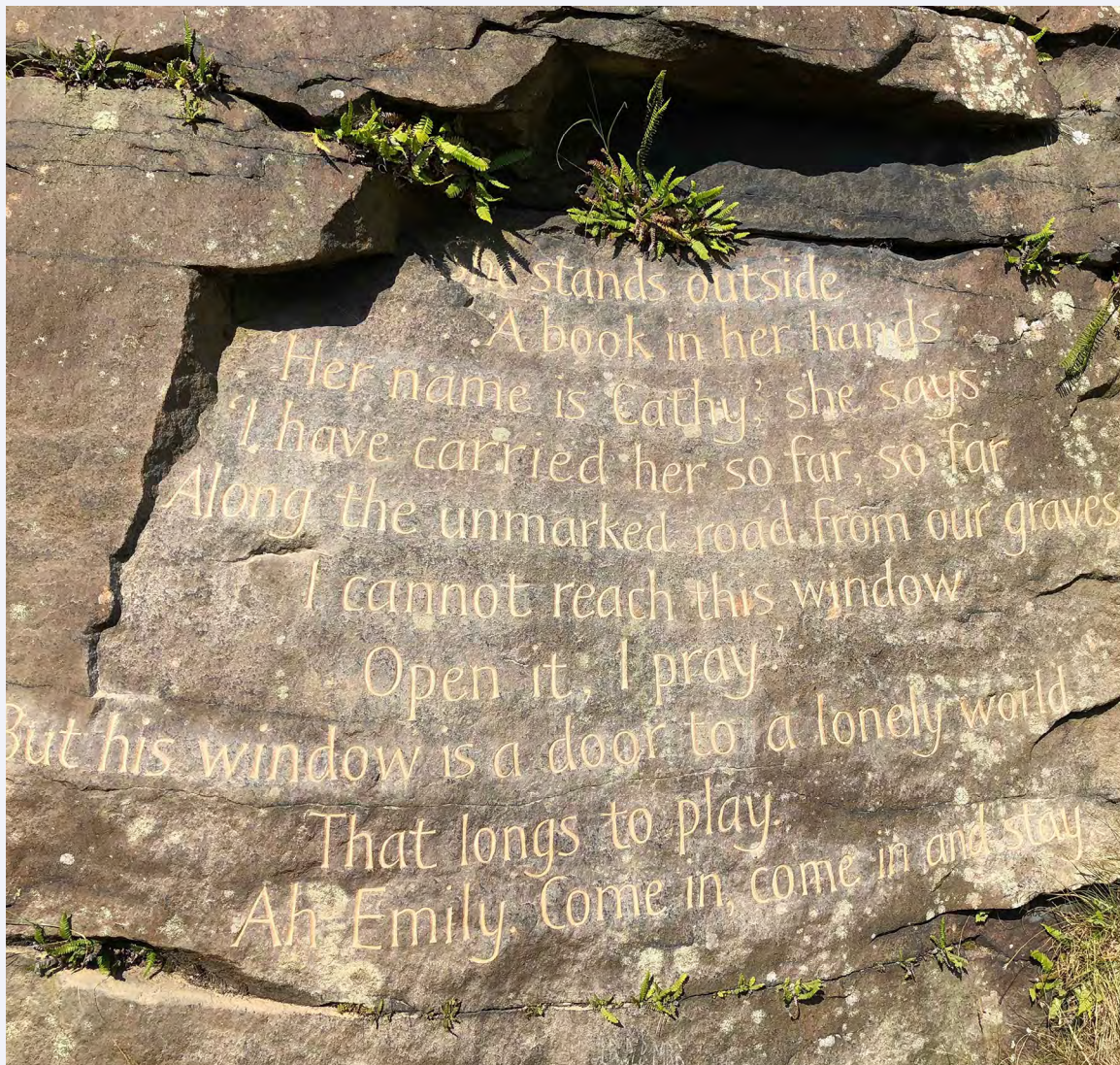
Public Engagement

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 will articulate priority areas for development, the resources required, and outline 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 driven and supported by Department of Music and Music Technology 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 avant garde 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
- KEF metric score for public engagement increased
- Levels of staff conferment citing public engagement work

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