

Distinction and Diversity  
in Higher Education

**GuildHE**

# BUILDING THE JIGSAW

Heatmaps and Case Studies illustrating local,  
national and international impacts of specialist  
and smaller universities and colleges.

**James Ransom**  
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# Contents

Foreword	1
Introduction	2
Heatmapping Institutional Interaction	3
The University of Worcester: National Solutions from Local Challenges	4
Feeding the Nation: The Agricultural Sector	6
National Importance, Regional Significance: Cybersecurity and Abertay University	8
Productive Collaborations: Leeds City Region	10
Problem Solving and the Dorset ‘Super Specialists’	12
Where Next?	14
Universities and Colleges Involved in the Report	15

# Foreword

We are delighted to be launching the “Building the Jigsaw” report, bringing together evidence and examples of the role of small and specialist providers in driving local, regional and international impact and prosperity. Small and specialist universities have long been anchors within their communities. They have been central to their towns and regions, through teaching, local job market stimulation, research and innovation, and wider engagement.

The government has been working on its intention to improve public investment in research and development outside of the Greater Southeast. This, coupled with the levelling up agenda and the plan to increase investment in R&D to 2.4% of the GDP by 2027, presents interesting implications for universities in the UK. The role that small and specialist providers have had, and can continue to play, in uplifting innovation and economies across the UK should be recognised and leveraged. This report uses heatmaps and case studies to demonstrate the plethora of knowledge exchange activities led by GuildHE members across disciplines and regions, bringing new evidence to the sector not always apparent in traditional statistics. It highlights the variety of ways in which innovation and socioeconomic impact can take place with local communities and specific groups, with businesses varying in size and impact, and even on an international scale.

95% of GuildHE Institutions submitted world leading research to Research Excellence Framework 2021. Many of GuildHE's institutions were in the top 10% for several categories of the Knowledge Exchange Framework. The case studies in this report, when supplemented by the achievements in the REF and KEF, will hopefully drive recognition of the need to find better ways to capture excellence in diversity, both in regions and subjects.

I would like to thank James Ransom and Matthew Guest for their hard work and diligence in bringing together this work, and all the institutions that submitted case studies for their time and invaluable input.

Anthony McClaran

Chair of GuildHE

Vice-Chancellor St Mary's University, Twickenham

# Introduction

The Covid-19 pandemic has exposed the inequalities that exist across the globe, regionally and locally and it has challenged our ways of working, learning and socialising. As we adjust to these longer-term effects, now is the time to look towards an economic, social and cultural recovery that addresses these inequalities.

Research, development and innovation are part of the solution. Indeed, the UK government has committed to seeing investment in R&D reaching £22billion per year and that that investment should reach 2.4% of GDP by 2027<sup>1</sup>. Furthermore, the R&D budget can be used to assist the government in addressing its goals for levelling up regions and places<sup>2</sup> as the February 2022 Levelling Up the United Kingdom White Paper outlined.

## The potential of specialist and smaller universities and colleges

There is, understandably, a lot of the focus on the interaction between major research institutions and big business and how to 'prove' the value of knowledge exchange activities – the Knowledge Exchange Framework from Research England and the higher education sector's Knowledge Exchange Concordat being two major initiatives.

Natural innovators, many smaller and specialist institutions know their regions well and will be a critical part of generating economic recovery in those areas hit hardest and with potentially the longest road to recovery. They are frequently located in smaller towns, on the edge of cities, or in rural or coastal locations. They are locally significant as employers and community anchors and active partners in Local Enterprise Partnerships and other local bodies, such as Chambers of Commerce. They have both import and export strength potential for the communities, regions and industries that they serve.

They are innovative, agile industry experts that carry out high impact, practical research and knowledge exchange. They are closely aligned to the professions that they serve and well-positioned to stimulate the growth of key priority economies, such as the creative industries, health and agriculture.

Evidencing this is frequently focussed on large-scale metrics that can be challenging so this report outlines a different approach to capturing some of that work.

## What this report is about

This publication visualises the innovation, research and knowledge exchange institutional interactions that take place by piloting a combined case study and experimental heatmapping approach.

The studies reveal a surprising number of initiatives and collaborations being undertaken by smaller and specialist institutions that are actively addressing regional, national, and even international, economic, social and cultural challenges, often in unexpected locations throughout the UK.

The studies were carried out in 2019/20 before the Covid-19 pandemic occurred so some of the detail covered may have changed but the broad conclusions remain the same. If anything, the importance of capturing the role of a university in its place and industry has never been more relevant and we believe the case studies presented in the report highlight just that.

We hope that this publication provides some of the jigsaw pieces that smaller institutions add to the UK's innovation picture and their potential to aid an innovation-driven, socioeconomic recovery from Covid-19 in towns, cities and regions throughout the UK.

<sup>1</sup> The UK Government's 2021 Innovation Strategy reconfirms this commitment.

<sup>2</sup> The 2020 Nesta report on "The Missing £4billion" provides some strong evidence on how this could work – we will not go into the findings in this report. Retrieved from: <https://www.nesta.org.uk/report/the-missing-4-billion/>. Also see the Levelling Up White Paper: <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom>

<sup>3</sup> BiGGAR Economics. (2017, April). Economic Impact of the University of Oxford. Retrieved from website: <https://cdn2.hubspot.net/hubfs/1710999/downloadable-assets/Economic%20Impact%20of%20the%20University%20of%20Oxford.pdf>

<sup>4</sup> Universities UK. (2017, October 16). The economic impact of universities in 2014–15. Retrieved from: <https://www.oxfordeconomics.com/resource/the-economic-impact-of-universities-in-2014-15/>

<sup>5</sup> Emsi. (2019). Sport & Exercise Science Education: Impact on the UK Economy. Retrieved from: [https://guildhe.ac.uk/wp-content/uploads/2019/05/SES-FullReport-Final\\_compressed.pdf](https://guildhe.ac.uk/wp-content/uploads/2019/05/SES-FullReport-Final_compressed.pdf)

<sup>6</sup> It is important to note that teaching activity underpins the research and knowledge exchange (RKE) activities of specialist and smaller universities and that serving and equipping students remains their primary focus – their RKE functions would not exist without their teaching function. However, this project explicitly aims to capture the non-teaching interactions that smaller institutions undertake, which are often overlooked and undervalued.



# Heatmapping Institutional Interaction

## The Impact Challenge

One way in which universities aim to prove their worth is through the economic impact study. These have been carried out at institutional<sup>3</sup> and sector level<sup>4</sup> and provide a snapshot of likely economic contributions to their economy. They have also been used to evidence the economic impact of particular subjects and disciplines. In this way, they can be useful to illustrate the contribution of disciplines that have historically been overlooked or dismissed as “low value”, such as sports and exercise science<sup>5</sup>.

However, there are challenges with the traditional economic impact approach. Primarily, this includes an increasing movement towards, and an expectation of, a uniform approach that measures spending, output and employment, but does not capture the full impact of engaging with communities in a marginalised neighbourhood, or working with small businesses to strengthen their supply chain. Beyond a certain point, big number fatigue sets in. Figures between institutions are not always directly comparable, and the process of reaching the figures is not always transparent (or easily replicable).

Heatmapping is an experimental, emerging approach. It offers a different way to think about and capture the impact of knowledge exchange activities. The five case studies presented here are a result of this approach. They aim to tell the story of the local, national and international research and knowledge exchange that smaller institutions undertake. They do so by employing the idea of ‘heatmaps’ as a visual way of showing the unique contribution each institution has on “place”.

## The Approach

As this is a pilot study, eleven GuildHE member institutions were chosen in order to demonstrate how their research and knowledge exchange work had local benefit, but also had an impact on the national and international stage<sup>6</sup>. The institutions were chosen to reflect the diversity of higher education providers (by size, focus and type of institution), of geographic areas, and thematic work (drawn from the UK government’s four Industrial Strategy Grand Challenges).

Data was collected through primarily qualitative methods. This involved desk research of primary source materials (institution websites, reports and press releases), and telephone interviews with members of the senior leadership team and project leads. Interviews followed a set of semi-structured questions and explored themes identified from the initial desk research. This allowed a qualitative picture of institutional interactions to be developed. In order to contextualise insights, visits were carried out to three of the institutions involved – one standalone study (one institution) and one geographical study (two institutions).

## Generating a Heatmap

Heatmaps were generated, with a ‘bird’s eye view’ map shaded to capture the spatial impact of the institution. Each case study had a different ‘heatmap signature’ capturing pertinent aspects of institutional impact, generated through the process of interaction with staff and engagement with primary source materials. For example, a map at the local level may show work with a nearby community that rings the campus, another may capture work with small and medium enterprises (SMEs) scattered across the region.

The dimensions of a heatmap are not fixed. A basic map may capture international partnerships, initiatives between universities and local government, between universities and businesses, or between universities and communities or community organisations. Darker shading may represent scale of activity, depth of engagement or a longer history of working together. It could represent informal collaboration, or any activity where the university reinforces the goals of local government or supports communities – or particular societal groups. This lack of rigidity allows new forms of impact and novel activity to be captured.

In total, five case studies were conducted involving the eleven institutions. They involved two single-institution studies; two regional studies; and one sectoral (agricultural) study. Each study includes a qualitative case study and at least one heatmap visualising the topics covered.

# 1. The University of Worcester: National Solutions From Local Challenges

In some cities, the presence of the university is unmistakable the moment you leave the train station. From art galleries to sports arenas, the University of Worcester hosts many public spaces in the city. This presence extends beyond Worcester itself: with four campuses, the university is the major higher education institution serving the counties of Worcestershire and Herefordshire – a combined population of almost 800,000.

## The Hive

Two initiatives demonstrate the impact of the university. The Hive<sup>1</sup> is Europe's first fully integrated university and public library, jointly run and owned by the University of Worcester and Worcestershire County Council. The building is a meeting room, living room and reading room for the city, a space open to all with exhibitions, a business centre, council services, a café and a theatre – an embodiment of the university's civic mission with doors open 95 hours a week (pre-pandemic).

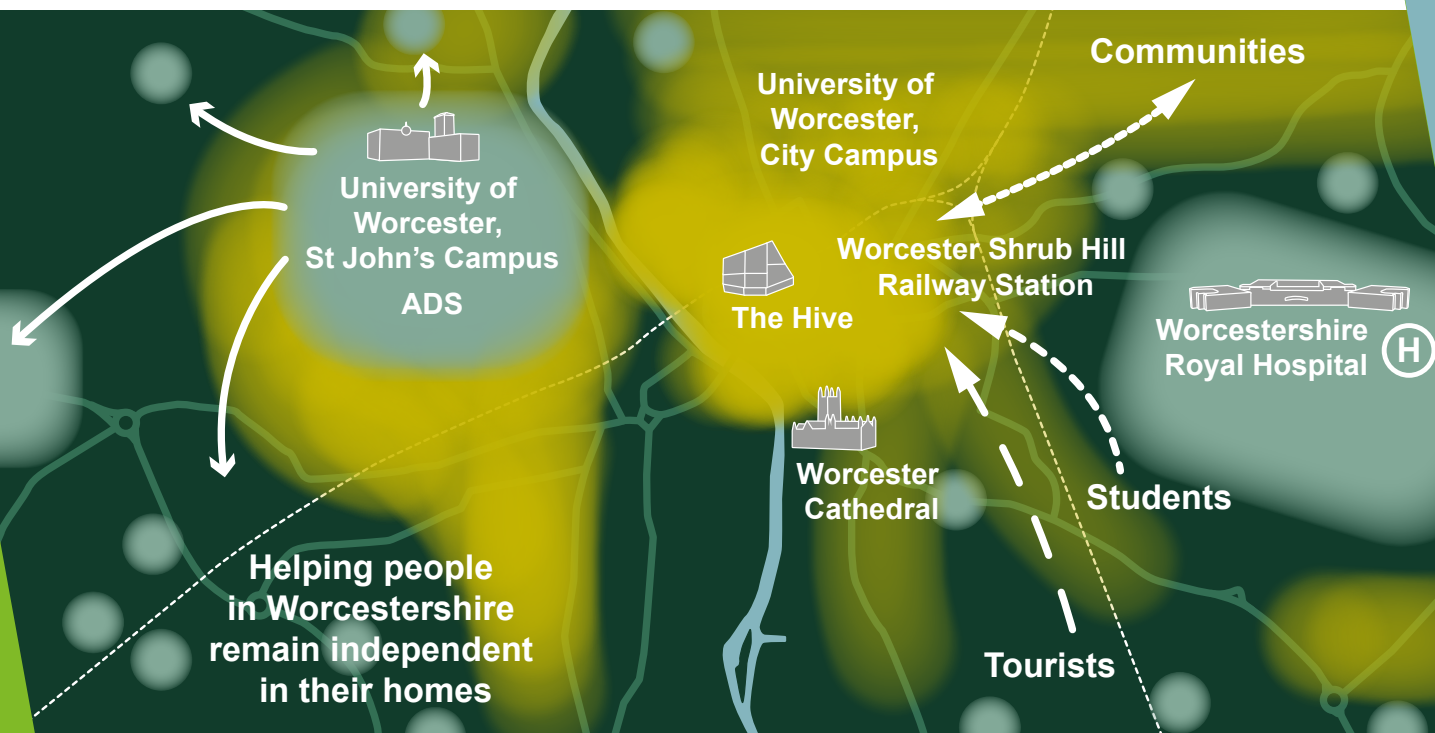
An independent study<sup>2</sup> found considerable social benefits to multiple stakeholder groups from The Hive. The study found the library has 'real and sometimes profound value to many stakeholders', including those who live in the wider community. As one interviewee noted: "when I started coming here 12 months ago I was completely computer illiterate. Now I can do loads... we don't have to rely on our son to do things for us as much now and feel much more independent and confident".



The University of Worcester location related to major cities.

<sup>1</sup> <http://www.thehiveworcester.org/>

<sup>2</sup> Evidence Base (2016). A Collection of Value A Social Return on Investment Evaluation of The Hive. Retrieved from [http://designinglibraries.org.uk/documents/Hive\\_SROI\\_report.pdf](http://designinglibraries.org.uk/documents/Hive_SROI_report.pdf)



The Hive (yellow) and the Association of Dementia Studies (ADS) (teal) are embedded in the city of Worcester. The Hive attracts – and provides services for – people from the community, students, and visitors. ADS has had an impact in and beyond the city helping local people with dementia, as well as driving national discussions about effective care and support.

Against a backdrop of the number of public library branches and paid staff falling<sup>3</sup>, the library annually ranks within the top ten most visited libraries in the country, and in the top five<sup>4</sup> for number of books issued. The facility attracts tourists as part of Visit Worcester's campaigns<sup>5</sup>, and hosts many events – from family nights to Mental Health First Aid for primary school students and teachers. Teenage readership has increased 356% compared to the former Worcester Public Library<sup>6</sup>.

## Association of Dementia Studies

A second initiative is the university's Association of Dementia Studies (ADS)<sup>7</sup>, a research and education centre focused on care and support for people with dementia. Through the centre, the university brings together NHS Worcestershire, Worcestershire County Council, and the national charity Dementia

UK. ADS has national and international reach, but also works locally: for example, helping people with dementia in Worcestershire to remain independent in their own homes<sup>8</sup>. Internationally, the centre has partnered<sup>9</sup> with organisations in Italy, the Netherlands, Poland, Spain and Australia to learn about effective community-based support and implement what works in the region.

Although representing two quite different sides of university activity, both initiatives demonstrate the university role in strengthening community engagement in Worcestershire – activity which has a broader economic and societal impact. Both also help tackle key challenges, from developing workplace skills to healthy ageing. The cultural and civic impact and reinvigoration of public space serve also to attract and retain people and businesses in the city.

3 <https://www.cipfa.org/about-cipfa/press-office/archived-press-releases/2018-press-relEases/libraries-lose-branches-and-staff-as-spending-continues-to-drop>

4 <http://designinglibraries.org.uk/index.asp?PageID=1507>

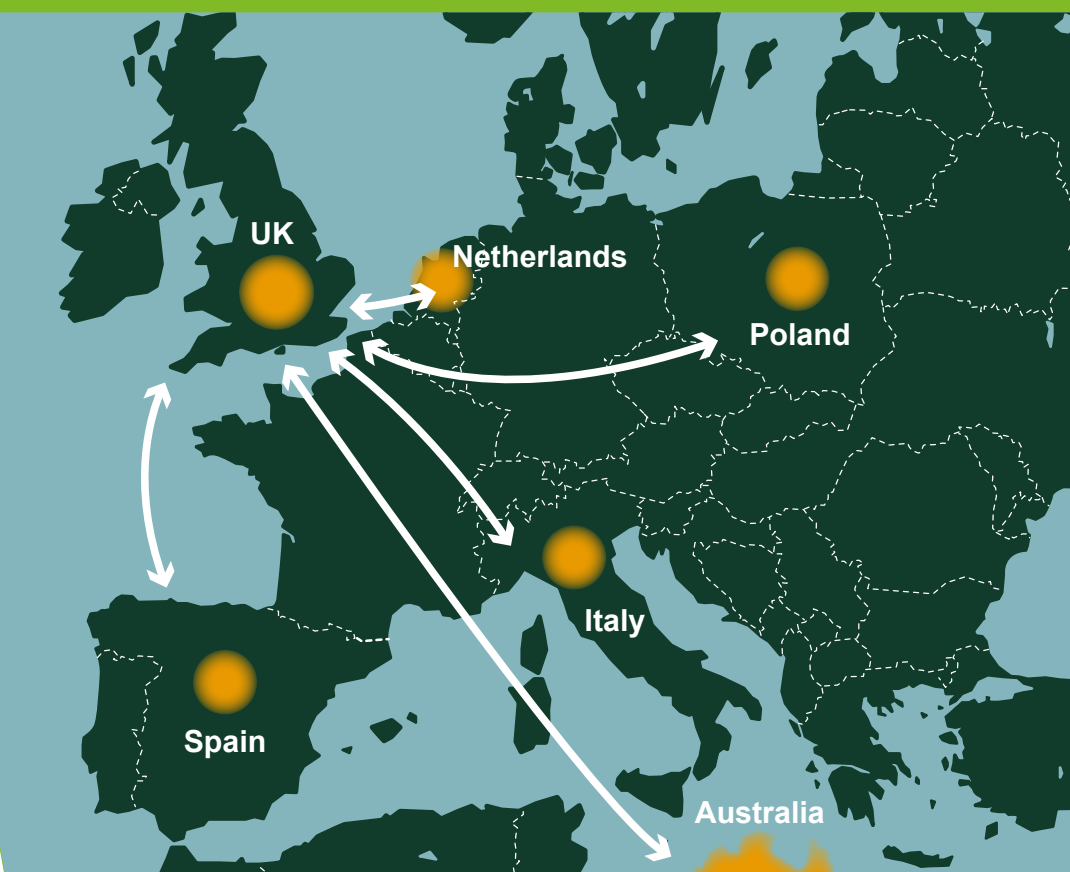
5 <http://www.thehiveworcester.org/>

6 <https://www.worcester.ac.uk/documents/annual-accounts-17-18.pdf>

7 <https://www.worcester.ac.uk/about/academic-schools/school-of-allied-health-and-community/allied-health-research/association-for-dementia-studies/home.aspx>

8 <https://adsdementiablog.wordpress.com/2019/05/16/dementia-dwelling-grants-what-are-they-and-do-they-make-a-difference/>

9 <https://www.meetingdem.eu/>



The Meeting Room project is an example of how the Association of Dementia Studies (ADS) has forged connections with international partners. The project was part of the EU Joint Programme on Neurodegenerative Disease Research (JPND) – the largest global research initiative aimed at tackling the challenge of neurodegenerative diseases.

## 2. Feeding The Nation: The Agricultural Sector

The agricultural sector employs almost four million people and is larger than the automotive and aerospace sectors combined. As a result of the Covid-19 pandemic, there will be increased pressure to make vital supply chains more resilient (meaning more local in many cases), including agriculture and the wider food and drink industry. Many technological innovations and productivity improvements within this highly significant industrial sector both within the UK and internationally are being driven by smaller and specialist institutions.

This specialist expertise is transforming the future of food production, bringing together disciplines such as robotics and artificial intelligence and contributing to the broader push towards clean growth. Several agriculture-

focused higher education providers have their own farms and research centres, with industry based on-site, for testing and development. But the impact spreads wider: in their region providers work with farmers who benefit from expertise and new knowledge, and institutions are active within Local Enterprise Partnerships (LEPs). Nationally, providers work with the Department for Environment, Food & Rural Affairs and other organisations and government departments to shape policies and programmes. Agricultural institutions work with the Department for International Trade to boost the profile of UK agricultural innovation overseas. Educational and R&D programmes have been forged with international partners from the US to China and Kenya to the Netherlands.



Small and specialist higher education providers help shape the agricultural sector of tomorrow.



Although these centres of expertise and training are scattered across the UK, and often in rural areas, they work with each other (and larger universities) and are keenly aware of each other's strengths and areas of focus. The result is a set of complementary institutions that together have one eye on the challenges faced by the sector today, and another on the opportunities and changes of tomorrow. Above all, the importance of agriculture and food production to the UK means a sharp focus on translating innovation into practical, tangible, useful benefit for farmers and industry. Four initiatives at four different providers showcase this.

### Harper Adams University

In Shropshire, Harper Adams University runs the Hands Free Hectare project with the company Precision Decisions, with funding from Innovate UK. Several harvests have been completed without operators in the driving seats or agronomists on the ground<sup>1</sup>. Now the project has expanded to a 35 hectare farm doubling as a testbed open to industry and is helping to re-imagine classic paintings for a new exhibition examining how engineering can help tackle climate change<sup>2</sup>. The shift to a 'hands-free' farm has garnered press from 85 countries and attracts headlines as a sign of a more efficient future of precision farming, with the UK at the forefront. But the development also means working with new industries and the creation of highly skilled jobs needed to, for example, manage autonomous vehicles. Nor does this mean the end of the farming profession, with farmers vital for managing livestock welfare, monitoring and quality control, and running a successful business.

### Hartpury University and Hartpury College

Hartpury University and Hartpury College, near Gloucester and the Welsh border, works with the 'long tail' of farms and farmers who are not necessarily at the cutting edge of new production techniques and application of the latest industrial technology. Hartpury focuses on knowledge exchange and boosting productivity for this group, reaching farms that have the potential to grow and become more efficient, but lack the time or resources to test new innovations themselves.

Training is also delivered with the Agriculture and Horticulture Development Board, which works to provide farmers, growers and industry with actionable knowledge, and Hartpury launched an agri-tech centre in late 2019 in partnership with the GFirst LEP, with a focus on agricultural productivity and profitability<sup>3</sup>.

### The Royal Agricultural University

The Royal Agricultural University, near Cirencester and the Cotswolds, is home to Farm491, the largest agri-tech incubator and innovation space in the UK. The incubator supports entrepreneurs with potential for impact in the agricultural sector to grow their businesses. Farm491<sup>4</sup> is helping build the UK agri-tech ecosystem and garner international recognition, with the aim of enabling startups to scale beyond the UK and attract high-tech talent to Gloucestershire. Named after the 491 hectares of farmland available for research and testing, the initiative also provides thought leadership on the agricultural workforce of the future, and the role agri-tech plays in the climate change agenda. Examples include roundtable discussions and grand challenge competitions to shed light on underserved topics such as nutrient pollution and regenerative agriculture.

### Writtle University College

Writtle University College in Chelmsford, Essex combines disciplines to build the workforce needed for the agricultural sector of the future. This means bringing together research in horticulture and agriculture, working with supply chains and related industries (such as retail), supporting the diversification of crops and produce, and helping to understand emerging areas such as urban farming. Underpinning this work is a focus on environmental sustainability. Combined with technological developments and the need to tackle climate change, this means a workforce with a wide set of skills is in high demand, and the university recruits into further and higher education courses and works with schools to raise awareness of agricultural careers. Writtle (in common with other GuildHE members) is active in agricultural bodies shaping policy across the UK, including Landex (representing land based colleges), the Agricultural Universities Council<sup>5</sup>, and the rural group of the LEP.

<sup>1</sup> <https://www.harper-adams.ac.uk/news/203288/the-hands-free-hectare-project-completes-second-harvest>

<sup>2</sup> <https://www.handsfree.farm/press-releases>

<sup>3</sup> <https://www.hartpury.ac.uk/university/facilities/agriculture/agri-tech-centre/>

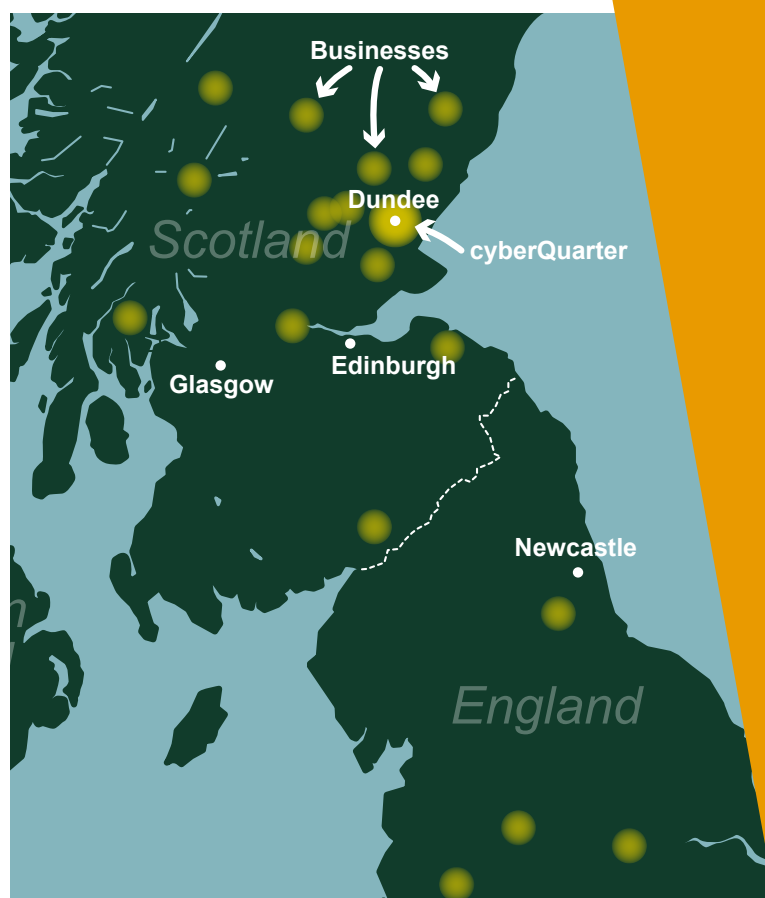
<sup>4</sup> <https://farm491.com/>

<sup>5</sup> <https://www.auc-uk.org/>

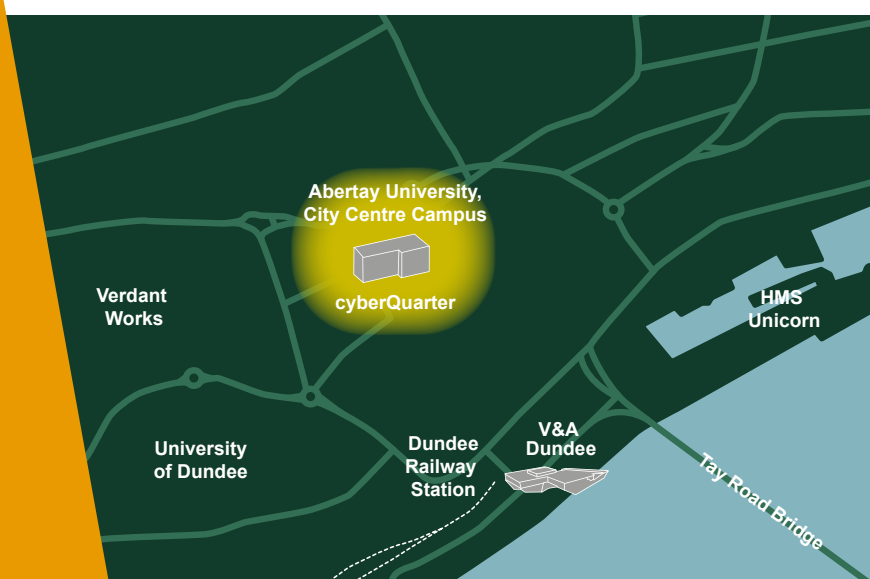
### 3. National Importance, Regional Significance: Cyber Security and Abertay University

Cyber security has long-established roots in the city of Dundee. Abertay University offered the first degree in Ethical Hacking in 2006, helping to meet the demand for experts who find and fix security weaknesses in computer systems and networks. At a UK level, the university has long been known as a national leader in cyber security and Abertay is currently the only Scottish institution to have achieved gold level Academic Centre of Excellence for Cyber Security Education recognition from the National Cyber Security Centre (part of GCHQ). Building on its reputation as a global hub for the video games industry, Dundee is now also rapidly growing as Scotland's home for cyber security innovation and development, as the worldwide demand for skilled cyber graduates continues to grow. Businesses across all sectors need to address the risks of cyber attack but also stand to gain by applying new innovations in this area, with those driving progress in the region committed to attracting and retaining the very brightest talent.

Abertay cyberQuarter is the next step for Dundee's digital journey. Following investment as part of the Tay Cities Deal <sup>1</sup> from the Scottish and UK Governments, Abertay University is leading the new £18m cybersecurity research, development and innovation centre, set on the university campus in the heart of the city<sup>2</sup>.



**Abertay cyberQuarter contributes to Scotland's cyber ambition and will work with large and small businesses, as well as retaining and attracting a skilled workforce.**



**The site for Abertay cyberQuarter is in the heart of Dundee on the University of Abertay's city centre campus.**

The dedicated space is designed to facilitate interaction between cyber security firms and researchers, powering innovation within an environment featuring the highest standards of physical and digital security. The centre includes a 'dirty lab' allowing for safe experimentation with the latest cyber threats using cutting edge technology and taking advantage of Abertay's academic expertise.

The impact of Abertay cyberQuarter will be felt locally, nationally and internationally – extending wider over time. It will attract regional SMEs and provide resources for them to grow, while also allowing larger companies to establish a presence in the city, supporting economic development. Alumni will have a space to grow their businesses, while those in industry will work directly with academics, postgraduate researchers and students. Somewhat unusually for the UK, Abertay has a 'creator-owned' model

<sup>1</sup> [https://www.taycities.co.uk/sites/default/files/tay\\_cities\\_deal\\_2018\\_heads\\_of\\_terms.pdf](https://www.taycities.co.uk/sites/default/files/tay_cities_deal_2018_heads_of_terms.pdf)

<sup>2</sup> <https://www.abertay.ac.uk/business/cyberquarter/>



of IP, which is designed to incentivise the kind of investment and experimentation that Abertay cyberQuarter is seeking to foster.

As Abertay cyberQuarter develops, impact will be magnified through supply and demand side forces. On the supply side, the work of cyber security and tech firms becomes more effective, driving expansion and employment growth in the region, while on the demand side, other industries gain from incorporating the latest cyber security technology into their products and services. At first this is likely to be early adopters with an eye for being ahead of the curve. For a regional salmon farmer or whisky distiller, for example, this could mean finding new ways to guarantee the provenance of their product. Over time the reach of the centre will extend with the goal of supporting the kind of growth and expansion that Dundee's computer games industry cluster saw in the 1990s<sup>3</sup> with Abertay acting as the city's anchor institution.

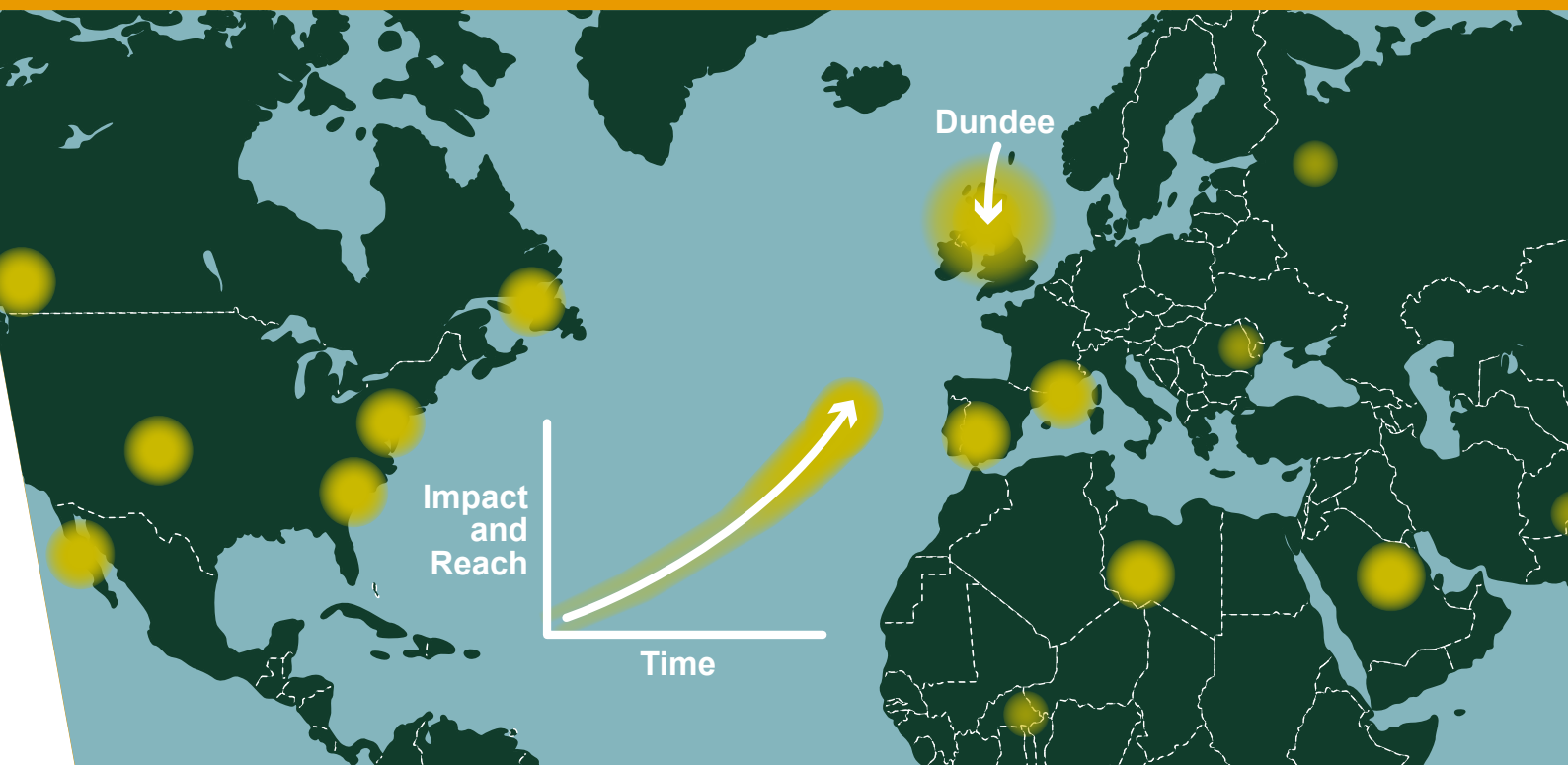
The university – in line with Scottish government policy – is keen to maintain a focus on inclusive growth in cyber, looking

beyond the top GVA providers to smaller businesses and deeper into supply chains. Abertay cyberQuarter is already working with a host of partners and organisations like the local Chamber of Commerce, as well as public bodies such as the NHS National Services Scotland who will soon locate their state-of-the-art Security Operations facility on site with the creation of 30 new jobs. In addition to creating job growth and new innovations, impact will be seen in the increase in resilient businesses that survive (or avoid) cyber attacks. With four in ten businesses (39%) and a quarter of charities (26%) reporting having cyber security breaches or attacks in the 12 months to March 2021<sup>4</sup> the importance of cyber security development to all industries cannot be overstated. In this rapidly-growing sector<sup>5</sup> Abertay is working to help an already successful Scottish cyber cluster to defend against threats, but importantly also to promote innovation and positive wider impacts across many other industrial sectors, while making a significant contribution to the economic growth of Dundee.

<sup>3</sup> <https://www.scotland.org/features/dundee-ups-its-game-for-new-exhibition>

<sup>4</sup> DCMS Cyber Security Survey (2021): <https://www.gov.uk/government/statistics/cyber-security-breaches-survey-2021/cyber-security-breaches-survey-2021>

<sup>5</sup> DCMS (2021) Cyber Security Sectoral Analysis 2021. Retrieved from <https://www.gov.uk/government/publications/cyber-security-sectoral-analysis-2021>



The impact and reach of Abertay cyberQuarter is forecast to increase over time as the benefits of improved security are adopted by other industries.

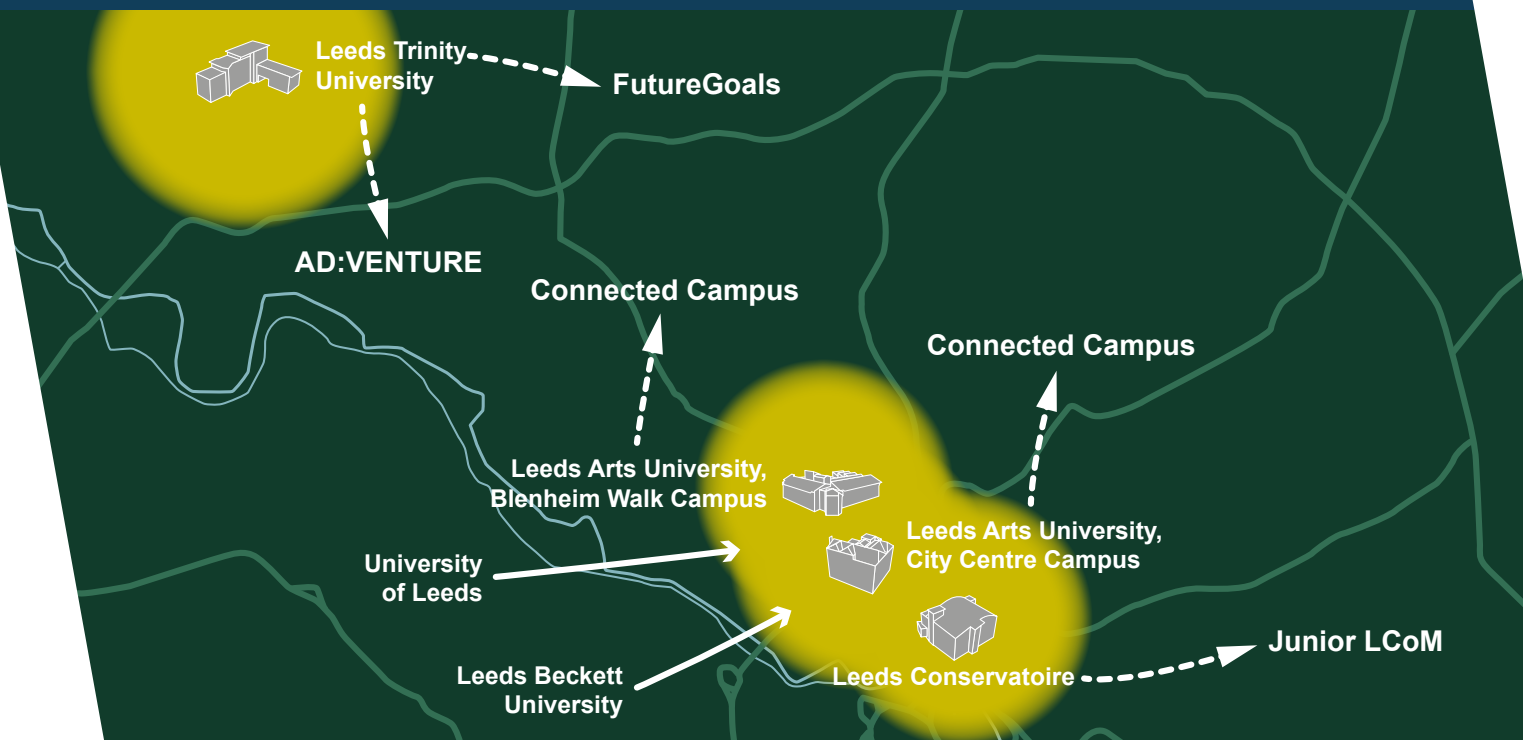
# 4. Productive Collaborations: Leeds City Region

The activity of higher education providers is often distributed widely across a region. In Leeds City Region, the largest economy outside of London, this means projects and relationships that reach up to and beyond the borders of the ten districts. The work of three small and specialist institutions – Leeds Arts University (with two sites near the centre of the city), Leeds Conservatoire (based in the Quarry Hill district of Leeds), and Leeds Trinity University (on a campus six miles from Leeds city centre) – help to illustrate this reach.

All three providers are members of Yorkshire Universities<sup>1</sup>, a regional grouping of 12 higher education institutions with a particular focus on place. This enables smaller and specialist providers to shape policy within Leeds City Region (home to three quarters of the membership) and Yorkshire and Humber, and to collaborate with larger multi-faculty universities. There is a rich set of relationships between larger and smaller institutions in the region, with complementary strengths leading to numerous research and innovation partnerships. Our focus here, however, is on the valuable socioeconomic activities of the smaller providers, sometimes overlooked by national policymakers.



Leeds and the surrounding areas.



Leeds city region map indicating where the main campuses are located.

## Leeds Arts University

Leeds Arts University is the only specialist arts university in the North of England. The skills of students are matched with businesses to deliver commissions and live briefs, including work for hotels, businesses, property developments, restaurants and educational establishments – injecting a dose of creativity to improve wellbeing in workplaces and public spaces. The creative industries are a key part of the UK's future economic growth, and students are building contacts and sharing work at key international exhibitions and trade shows, from fashion textiles in Paris<sup>1</sup> and advertising in Cannes<sup>2</sup> to short films in Los Angeles<sup>3</sup>.

Leeds Arts University also works with Leeds Trinity University, the University of Leeds, Leeds Beckett University, Sheffield Hallam University, the University of Bradford, the University of Hull, the University of York, and York St John University, as part of Connected Campus<sup>4</sup>. The partnership was established by Screen Yorkshire, an organisation set up to champion the film, TV, games and digital industries in Yorkshire and the Humber. The partners work together to address skills gaps, support companies in the region (including the relocated Channel 4 headquarters in Leeds), and develop new models of training including degree apprenticeships and online learning.

## Leeds Trinity University

Leeds Trinity University is part of AD:VENTURE<sup>5</sup>, a programme supporting over 250 local businesses that draws on specific areas of university expertise – from effective use of photography for online marketing to improving emotional resilience. Support ranges from workshops to one-to-one mentoring, and as small businesses are often unable to travel to the university campus, breakfast events are held in partnership with the library in the city centre. This generic-but-potentially-transformative support is

applicable to a wide range of businesses, and is now in its third year. In parallel the university has expanded its business support work and digital skills training through FutureGoals<sup>6</sup>, working alongside the West Yorkshire Consortium of Colleges to give one-to-one support from local tutors and industry professionals. The programme is supported by the European Social Fund and managed by Leeds City Region LEP, and offers furloughed or employed individuals the chance to gain new skills and enter employment within key regional sectors.

## Leeds Conservatoire

Leeds Conservatoire is the UK's largest conservatoire and runs Leeds Junior Conservatoire<sup>7</sup>, which includes a Saturday music school attracting over 160 students from the age of eight. Leeds Junior Conservatoire aims to develop and nurture talented young musicians, and offers financial support for the disadvantaged (a third of students receive a bursary). Students are mainly drawn from Leeds and surrounding areas, although some travel from as far as Derby and Cumbria. The music school encourages creativity and collaboration, builds confidence, and acts as a gateway to further study and higher education. As one student, who started at the Junior LCoM aged nine and is now a first-year undergraduate, said:

*"I learned the skills of listening to others, playing with others, sight-reading and discipline, as well as playing with feel, fun and fluidity within an ensemble. There's so many areas of knowledge that the Junior Programme has informed me of that I didn't even know I would need, such as music production and working in the music business... Junior LCoM provides opportunities for me to this day. As I start my degree at Leeds Conservatoire, I will apply the skills I've learnt on my journey to my professional career... I wouldn't be the musician I am today without the delight of attending Junior LCoM."*

1 <https://www.leeds-art.ac.uk/news-events/news/textile-design-students-showcase-at-major-international-trade-show/>

2 <https://www.leeds-art.ac.uk/news-events/news/creative-advertising-alumna-wins-uk-young-lions-competition-2020/>

3 <https://www.leeds-art.ac.uk/news-events/news/festival-success-for-animation-students/>

4 <https://www.screenyorkshire.co.uk/connected-campus/>

5 <https://www.ad-venture.org.uk/>

6 <https://futuregoals.co.uk/>

7 <https://www.lcm.ac.uk/courses/leeds-junior-conservatoire/>

## 5. Problem Solving and the Dorset 'Super Specialists'

Dorset faces several challenges. With one of the oldest populations in the UK, by 2040 there will be almost one person receiving a state pension for every person of working age – an old age dependency ratio of nearly one<sup>1</sup>. The need to retain more skilled graduates in the region compounds the challenges ahead. Many parts of the UK will later undergo the same demographic shifts taking place in Dorset, and will be watching closely.

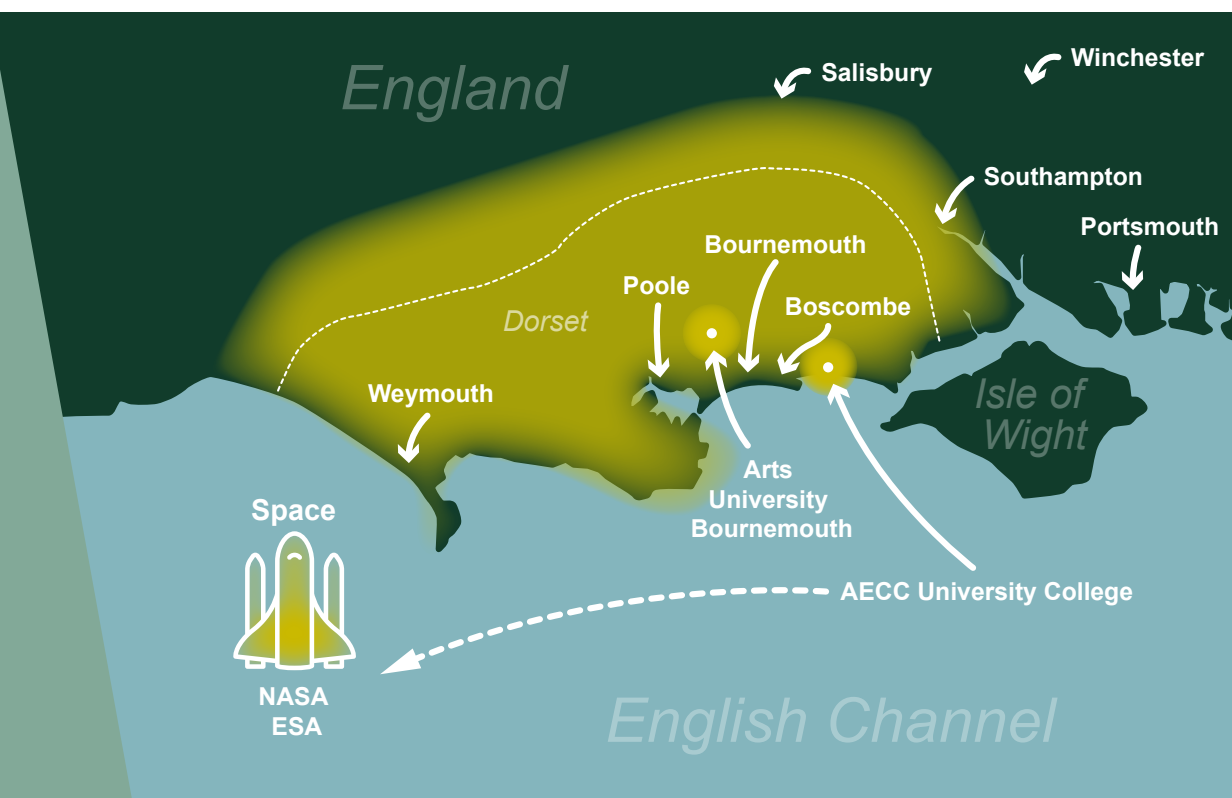
The region's higher education providers are responding as 'super specialists'<sup>2</sup>. Dorset is home to a specialist arts university (Arts University Bournemouth), a specialist health sciences university college (AECC University College), and a specialist agricultural college (Kingston Maurward College), together with Bournemouth University. Although their focus is on quite different areas, they are finding areas of overlap in tackling the challenges that Dorset faces, from encouraging multidisciplinary approaches for student problem solving to helping the elderly age well and remain

physically, socially and culturally active.

### AECC University College

A 'super specialist' institution can have a wide impact. AECC University College have been global leaders in musculoskeletal healthcare since being established in 1965 as the first chiropractic college in Europe. AECC is home to highly-specialist equipment including an upright MRI scanner, thirty-two treatment rooms, an exercise centre and x-ray suite. Impact is global: technology developed at AECC has been used by NASA and the European Space Agency<sup>3</sup>.

But AECC's impact is also local: more than 50,000 treatments are provided at the Chiropractic Clinic each year. Over 100 Senior Chiropractic Interns, studying in their final year, take part in at least two community engagement events as part of their course, working with deprived local communities. With back pain the leading cause of disability in the UK<sup>4</sup> – and a brake on productivity and growth – demand for musculoskeletal expertise is expected to grow.



Dorset's 'super specialists' have regional impact, but the work is globally excellent – even extending into space with new technology adopted by NASA and the European Space Agency.

<sup>1</sup> Dorset LEP (2019), Board Papers. Retrieved from: <https://www.dorsetlep.co.uk/userfiles/files/Board%20paper%20minutes/2019/LEP%20Board%20Papers%20for%2028th%20May%202019.pdf>

<sup>2</sup> <https://www.dorsetlep.co.uk/news-article/the-unique-potential-of-dorset-s-creative-industry-in-innovative-cross-sector-collaboration>

<sup>3</sup> <https://www.aecc.ac.uk/research/latest-research/european-space-agency/>

<sup>4</sup> <https://www.england.nhs.uk/blog/charles-greenough/>

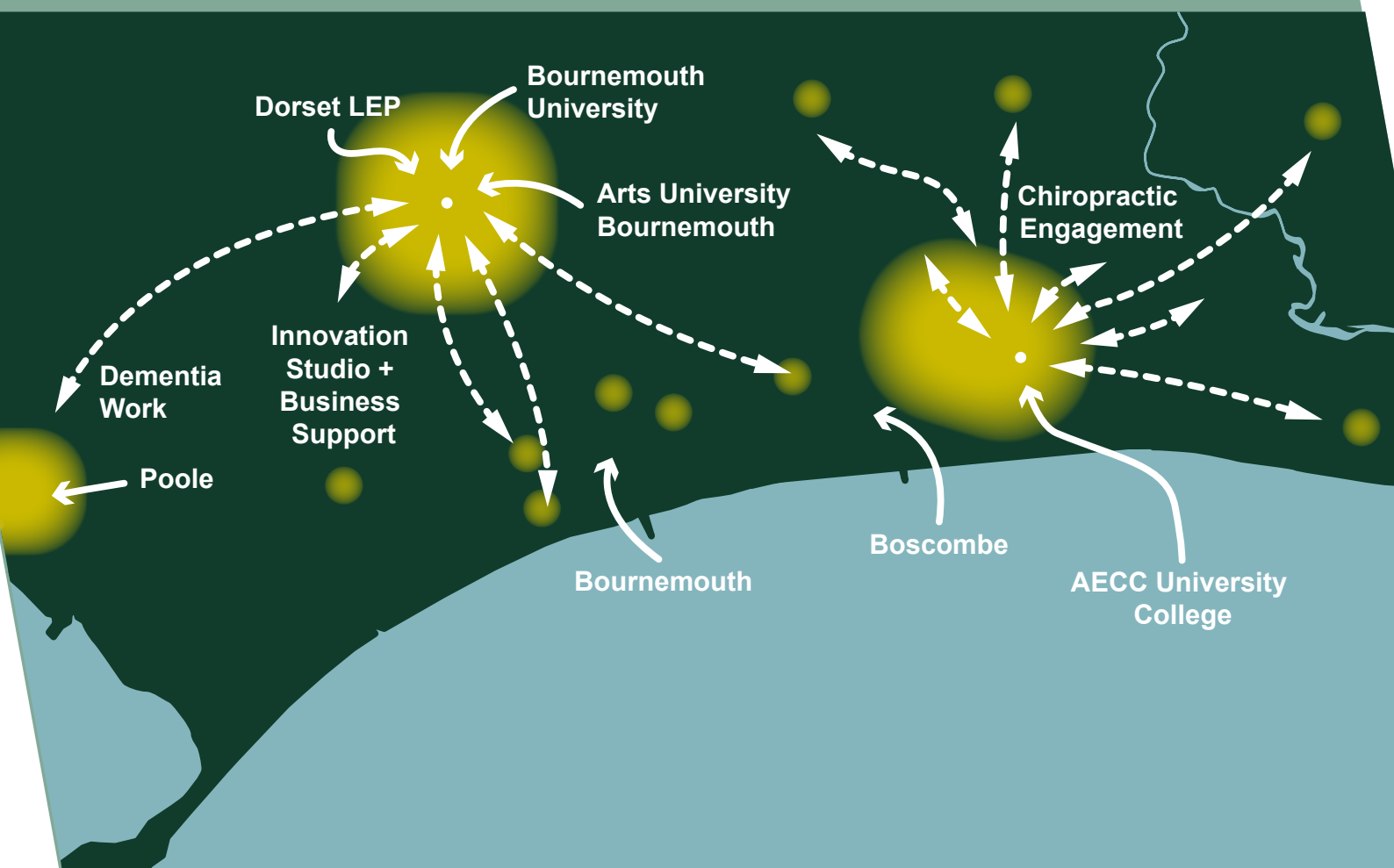
## Arts University Bournemouth

The work of Arts University Bournemouth (AUB) has helped meet the demand for, and drive the development of, the creative industries in Dorset: the region is one of the fastest growing creative and digital hubs in Europe<sup>5</sup>. AUB has received £1.2 million from the European Regional Development Fund to help local businesses to work with staff and students to solve design problems, and to access world-class equipment and facilities for prototyping and testing. A further £1.4 million from the Dorset Growth Deal is funding an Innovation Studio to support start-ups in the region<sup>6</sup> – boosting the chances of survival for new companies and helping them to grow, and thereby increase opportunities for employment and graduate retention.

In addition to business, the impact of AUB extends into communities. A research group at the university, AUB Human, has explored how design can help navigate the challenges and opportunities of an ageing society. Students have helped tackle local health challenges: in a brief set by local leaders and the NHS, teams provided ideas and proposals to help the town of Poole become a dementia-friendly community and environment (Poole has 20,000 people living with dementia). To address the broad but interconnected economic and social challenges facing local areas, a 'super specialist' approach can be highly effective.

<sup>5</sup> <https://www.dorsetlep.co.uk/creative-industries>

<sup>6</sup> <https://aub.ac.uk/industry/innovation-studio>



Arts University Bournemouth and AECC University College have extensive community links.



# Where Next?

The case studies and heatmaps presented here are the results of a pilot study undertaken in 2019/20 with 11 specialist and smaller universities and colleges in the UK. Despite this small sample from before the Covid-19 pandemic, they illustrate a different approach to capturing institutional interactions and their research and knowledge exchange impacts in relation to both the industries and places served by them. Several of the studies also highlight the deep interconnectedness of research, innovation, knowledge exchange and teaching through the inclusion of teaching-based activities that lead to productive socioeconomic initiatives. Between them, the studies demonstrate the positive contributions, and potential contributions, that specialist and smaller universities and colleges make to their industries, professions and places.

We hope that the studies presented here offer some food for thought for how funders and policymakers conceptualise and reward institutional impacts and interactions, and that this approach encourages higher education providers to consider new ways of demonstrating their worth.

## Top three takeaways for policymakers and institutions

*1. Innovation does not always mean “brand new”, particularly when considered at local levels.*

The UK Government’s definition of “innovation” is ‘the creation and application of new knowledge to improve the world’<sup>1</sup>. The examples provided above are not all brand new at a global or even national level; however, they are newly applied, and more importantly, deliver benefits for the localities and industries that institutions work with. As governments – internationally, nationally or regionally – consider using innovation to drive recovery and growth, this point needs to be recognised – replication of success elsewhere, whether intentional or organic, should be permitted and encouraged as much as seeking the next new thing.

*2. Capturing impact – positive and negative – is important.*

With the investments placed in innovation, research and development, impact and positive impact need to be demonstrated to a range of audiences, not just funders and governments. Local and professional communities need to see the results of collective taxpayer investment and to be included in solutions for growth. The Institute for Community Studies report entitled *Why don’t they ask us? The role of communities in levelling up* offers some useful perspectives on the views of local communities in relation to growth funds<sup>2</sup>.

One thing that is clear is that impact must be talked about and presented in different ways. It is also crucial that less positive impacts are captured too – we can learn from failures and unintended consequences as much as successes about how to be better in future.

*3. Funding for success requires a funding mix.*

The UK Government Innovation Strategy states: “One size does not fit all, with different types of research and innovation being suited to different lab structures, funding agencies, and locations”<sup>3</sup> which is important. Different interventions require different funding solutions. If the UK is to achieve its innovation and R&D targets, the government and funders need to fund a wide range of institutions in different locations. Simple wins could include extending the reach of the Higher Education Innovation Fund (HEIF) and widening the terms of the already successful Strength in Places Fund to support places with lower economic output but emerging innovation potential.

Institutions too must also be brave with the resources that they have. The collaborations that are highlighted in the case studies would not have come about without long-term commitment and investment in relationships. They can lead the way by example, incentivising others to support innovative projects that lead to socioeconomic recovery growth.

## A note on developing the heatmapping method

Our related journal paper explores some recommendations for how the heatmapping method could be refined. This involves considering triangulation interviews, bringing in public data sets and adapting Social Value perspectives<sup>4</sup>.

## Acknowledgements

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<sup>1</sup> UK Innovation Strategy: <https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it>

<sup>2</sup> The Institute for Community Studies: <https://icstudies.org.uk/insights/blog/why-dont-they-ask-us-role-communities-levelling>

<sup>3</sup> UK Innovation Strategy: <https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it>

<sup>4</sup> You can access the journal paper *Size Matters: Completing the Jigsaw for Rural and Regional Productivity. Exploring the Concept of Heatmapping for Evidencing the Non-Teaching Interactions and Impact of Smaller and Specialist Universities and Colleges in the United Kingdom* at <https://articlegateway.com/index.php/JABE/article/view/3883>



## Universities and Colleges Involved in the Report



## About GuildHE

GuildHE is an officially recognised representative body for UK Higher Education. Our members are universities, university colleges and other institutions, each with a distinctive mission and priorities. They work closely with industries and professions and include major providers in technical and professional subject areas such as art, design and media, music and the performing arts; agriculture, food and the natural environment; the built environment; education; law; health and sports.

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