

## Research-intensive universities driving innovation and commercialisation across the UK

### Universities underpin the UK's strong track record in innovation

The UK is a world leader in research and innovation. Based in every region and nation in the UK, British universities play a key role in driving UK innovation and outperform universities in competitor countries:

- The UK ranks 4th in the Global Innovation Index, driven largely by the quality of both universities (2nd) and scientific publications (1st).<sup>1</sup>
- The World Economic Forum ranks the UK number 1 in Europe for university-industry collaborations,<sup>2</sup> reflecting the breadth and depth of commercial partnerships.
- UK universities are more efficient than US counterparts in commercialising research, spending £4.6m per patent produced, compared to £6.4m in the US.<sup>3</sup>
- The number of UK university spinouts is growing at a faster rate than in competitor nations, with an increase of 14% in 2018/19, compared to 1.6% in the US.<sup>4</sup>
- Russell Group universities are major employers and hubs of investment that radiate to surrounding towns, supporting over 260,000 jobs, creating thousands of durable spinouts every year,<sup>5</sup> and undertaking contract and collaborative research projects worth over £2bn in 2018/19 alone.<sup>6</sup>

Universities have a proven track record of investing innovation funding to the benefit of British businesses, consumers, and the wider economy. Independent research has found that **every £1 granted to large research-intensive universities from the Higher Education Innovation Fund (HEIF) returns £12.46 in impact for society and the wider economy.**<sup>7</sup> They have also demonstrated leadership in the face of major crises, playing a central role in shaping the economic response to the Covid-19 pandemic in their local regions in partnership with others.

**Durham University's** Centre for Innovation and Technology Management (CITM) has reviewed the business models and supply chains of over 1.7 million businesses in the Midlands and North of England since the Covid-19 pandemic started, offering sector-specific advice to help businesses adapt and survive the pandemic.

### Universities support levelling by driving innovation in their local economies

With extensive cross-sectoral links, including with businesses big and small, universities are uniquely and ideally placed to support the Government's ambitions for levelling up across the country and are willing to adapt to deliver on the country's key priorities. University-business collaborations are key to accelerating innovation by translating cutting-edge research into innovative new products and services that benefit consumers and citizens, create high-value jobs across the UK and establish new export markets.

<sup>1</sup> Global Innovation Index, Sept 2020 [https://www.globalinnovationindex.org/home\\_2020](https://www.globalinnovationindex.org/home_2020)

<sup>2</sup> World Economic Forum, Europe 2020 competitiveness report <http://reports.weforum.org/the-europe-2020-competitiveness-report/#section=country-profiles-unitedkingdom>

<sup>3</sup> Measured by total research expenditure. Research England (2020), [An update on IP-related and commercialisation activities in England 2018/19](#)

<sup>4</sup> Ibid.

<sup>5</sup> The latest HESA HEBCI data shows 2,247 firms originating from Russell Group universities had been active for 3 or more years in 2018/19

<sup>6</sup> HESA 2018/19 HE Provider Data: Business and Community Interaction <https://www.hesa.ac.uk/data-and-analysis/business-community>

<sup>7</sup> This comprises £8.46 in core KE income for KEF cluster V universities (16 Russell Group universities), £2.20 in non-monetised benefits to society, and £1.80 in effects of spinouts/start-ups. Taken from Research England (2020), [Assessing the Gross Additional Impacts of the HEIF. An update for the period 15/16 - 18/19](#)

The diffusion and uptake of innovation into the economy is crucial for productivity growth. Whilst UK universities are world leading at generating innovation and applied research, the absorptive capacity of business and the local economy is a significant barrier to the diffusion of this innovation into the economy. To overcome this, **our universities have become proven drivers of innovation adoption and diffusion**. In areas with low absorptive capacity, our universities have led the creation of new innovation ecosystems, such as the Helix in Newcastle and the Nexus in Leeds. These long-term collaborations between universities, local government and business have led to vibrant new communities centred around R&D-intensive business, accompanied by new infrastructure, homes and high-value jobs – creating significant new “pull factors” into communities and the surrounding towns.

**Newcastle University**'s Helix is a purpose-built community created to house and foster a new collaborative ecosystem of innovators, entrepreneurs, start-ups and business brought together by university-led R&D. On a 24-acre site previously a disused brewery, the university has built an innovation testbed for new research around the themes of healthy ageing, urban planning and data. Space for new incubators and business, alongside cutting-edge R&D and sustainable urban housing have been built in collaboration with the local authority and other partners.

In 2019, **University of Leeds** launched the Nexus, a new innovation hub created to bring entrepreneurs, business and researchers together to collaborate on industry-led research and innovation. The Nexus can support up to 60 high growth technology-led businesses at a time. Businesses supported by the project have raised £8.7m in private investment since May 2019, helping create over 115 new high-skilled jobs with plans to create hundreds more.

In other areas, a different approach is needed and universities inject their innovations into the economy through the financing and creation of new businesses. Universities have an excellent track record in this area, not only creating new spin-out companies, but ones which survive, scale-up and have impact. Nine out of 10 university spin-outs which received private investment between 2011 and 2015 survived into 2018, compared to less than one in two new enterprises surviving over a five-year period in the wider start-up environment.<sup>8</sup>

The universities of **Bristol, Exeter** and **Southampton** have partnered with the universities of Bath and Surrey to create SETsquared, the world's leading business incubator, which turns university research and innovation into thriving businesses. Since 2002, more than 4,000 entrepreneurs have received wraparound support, helping them raise £1.8bn in investment. Independent analysis shows companies supported by SETsquared have delivered £8.6bn of economic impact and created 20,000 jobs across the UK. By 2030, the economic impact of SETsquared businesses is forecast to grow to £26.9bn.

The **University of Nottingham**'s local business network, the Ingenuity Gateway, is targeted at helping small and medium businesses, with over 160 new and early stage start-ups benefitting from support from the university. This includes through investment from the university's £360,000 Ingenuity Fund. Successes include Footfalls & Heartbeats, which manufactures face masks knitted with antimicrobial yarns, as well as electronically conductive yarn for sensor networks.

The Institute of Electronics, Communications, and Information Technology (ECIT) at **Queen's University Belfast** has developed a unique model of business engagement which involves creating spin-out companies, assisting external (spin-in) companies, working with InvestNI and UKTI to promote Foreign Direct Investment and working with companies nationally and internationally to promote technology transfer of research. ECIT's in-house commercial and business development team has supported the creation of nearly 100 technology start-ups, with 2,700 new jobs in the regional economy. An additional 1,800 roles have been created via a cutting-edge cybersecurity cluster, with businesses working in fields such as visual speech recognition, intrusion detection and secure platforms for automatic and intelligent image and video processing.

<sup>8</sup> [Anderson Law University Spinouts report \(April 2018\)](#).

## Sustainable and flexible R&I funding is key to unleashing innovation

**Innovation is built on insights derived from blue-skies research.** For example, quantum science was a curiosity-driven research topic for many years. Today, investment through quality-related 'QR' funds has positioned the UK at the forefront of a new era of quantum technology, exploited through the UK Quantum Technology Programme, which funds quantum technology hubs led by the **Universities of Birmingham, Glasgow, Oxford, and York**. The Government Office of Science's Blackett Review noted that "quantum technology could become comparable to the consumer electronics manufacturing sector, which is today worth £240bn a year worldwide". Supporting the whole research and innovation ecosystem, from basic research through to closer-to-market activities, is crucial to ensure a secure pipeline of novel discoveries and ideas which can be turned into new products, services and businesses for the future.

The UK's approach to innovation funding has been successful in a number of areas. We invite the Government to consider **expanding the following schemes** to build on their proven success and deliver even greater value for British consumers, businesses, and the wider economy:

- **HEIF** is an enormously valuable funding stream which has helped universities establish innovative ecosystems, commercialise research, collaborate with businesses, and employ staff with commercialisation expertise. But with HEIF funding currently only available in England, it means the UK as a whole is missing out on a significant and proven investment initiative. Where other nations do have somewhat similar funds (UIF in Scotland and NI HEIF in Northern Ireland), the level of funding is well below optimal levels. Extending HEIF and boosting funds available to all nations in the UK should now be a top priority for the Government.
- Despite only having been set up in 2017/18, the **Connecting Capabilities Fund (CCF)** has trained over 2,000 people in commercialisation, engaged over 100 businesses directly and over 1,500 in wider networks. It has set in train over 1,000 projects to create new products or services, helped set up 28 new spin-out companies, and levered £37m in additional external funding, together with nearly £60m in access to science funding.<sup>9</sup>
- The **Strength in Places (SIP)** fund has boosted collaboration between business, local government, and research-intensive universities to translate local pockets of research excellence into growth, bringing high-value jobs to communities where employment rates have lagged behind the rest of the UK. This includes the successful **Cardiff University**-led bid to make South Wales a compound semiconductor powerhouse and the **University of Glasgow's** 'Living Laboratory' consortium translating cutting-edge precision medicine R&I into a real-world clinical setting. The Living Lab is projected to deliver around 450 high-value jobs and over £135m GVA over an eight-year period.
- **Knowledge Transfer Partnerships (KTPs)** are also a proven success, injecting university expertise and innovation into businesses to improve absorptive capacity, especially within SMEs, who struggle to take on new innovations to boost productivity. At the **University of Liverpool**, on average, businesses forming a KTP increase profits by over £365,000 annually before tax, whilst over 75% of businesses participating in the programme go on to plan further R&D collaborations with universities.
- The **UK Research Partnership Investment Fund (UKRPIF)** has been successful in enhancing regional R&D intensity, creating new spaces for academics to work alongside clinicians, industrial partners and local SMEs. To date, UKRPIF projects have secured commitments of over £2 billion of co-investment from industry partners, charitable organisations and philanthropic donors.<sup>10</sup> Given the impact of Covid-19 on business confidence and availability of funds, **loosening the 2:1 matched funding requirement from business for this programme may be advisable in the short term to incentivise new private investment.**
- **R&D SME tax relief** stimulates SME demand for collaborative R&D activity. A recent HMRC study found every £1 of cost to the exchequer returns an additional R&D expenditure of

<sup>9</sup> <https://re.ukri.org/news-opinions-events/blog/connecting-capability-fund/>

<sup>10</sup> <https://re.ukri.org/funding/our-funds-overview/uk-research-partnership-initiative-fund/>

between 75p and £1.28.<sup>11</sup> Simplification of the scheme could be achieved by **introducing automatic eligibility for qualifying SMEs when undertaking R&D activities in collaboration with universities**. Combined with greater promotion of the scheme to improve awareness of it, this could boost SME R&D expenditure further.

- The **Innovation and Commercialisation of University Research (ICURe)** pilot programme helps university researchers explore opportunities for commercialisation, offering research teams with commercially promising ideas up to £30,000 to ‘get out of the lab’ and undertake intensive market assessment. The Government could consider expanding the ICURe scheme to other areas of the UK.

## How changing VAT rules can turbocharge university-business collaborations

The application of VAT rules around capital investment for the purposes of R&D act as a barrier to new university-business collaborations. These rules, deriving from EU application of VAT rules, stifle collaborative R&D.

Legislation allows the construction costs of certain buildings used ‘solely’ for a relevant charitable purpose to be zero-rated for VAT. Under the legislation, publicly funded or charitable research qualifies for this VAT relief. HMRC currently define ‘solely’ as meaning 95% of the use of a building, with a 5% allowance for commercial activities. Now that the UK has left the European Union, there is an opportunity to align VAT rules with Government’s ambitions for UK R&D.

**We invite the Build Back Better Council to consider introducing a targeted VAT exemption for new university buildings that will be used to undertake collaborative research projects with businesses.** A targeted exemption could build on the current HMRC guidance, which states that research falls outside the scope of VAT if it is in the public good. This would:

- Incentivise university-business collaboration, by reducing costs associated with capital investment for collaborative R&D, specifically on new state-of-the-art buildings designed to host innovative collaboration with businesses
- Provide additional confidence to business to return to higher risk, high reward areas of research as we emerge from the pandemic. The research business conducts with our universities is often world-leading and can lead to significant breakthroughs if business is willing to invest
- Cut red-tape for university-business collaborations, since calculating building apportionment for commercial and non-commercial activity for the purpose of VAT is highly burdensome
- **Increase the impact of public investment in new R&D facilities.** For example, Imperial College London’s £140 million Research and Translation Hub received £35 million from Government in 2016. However, as the whole development is liable for VAT, £24 million (i.e. equivalent to almost 70% of the total investment by the Government) was returned to the Treasury in VAT – meaning the true government contribution was a net £11 million, and therefore provided significantly less value in terms of research and innovation impact.

At the same time, **we encourage the Government to review how VAT legislation is interpreted in practice** to ensure that this is not inadvertently hindering equipment sharing between Higher Education institutions, businesses, charities and other partners.

<sup>11</sup> <https://www.gov.uk/government/publications/evaluation-of-the-research-and-development-tax-relief-for-small-and-medium-sized-enterprises>