Independent Review of University Spin-out Companies

Final report and recommendations

November 2023

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Executive summary

Spin-out companies ("spin-outs") are start-up companies that are created based on intellectual property (IP) generated through a university's research. The government has an ambition for the UK to be a science and technology superpower, with thriving partnerships between universities and high-tech spin-out companies contributing to economic growth and productivity. This review has looked at the most successful university spin-out ecosystems across the world, and within the UK, to identify best practices and opportunities to support spin-outs to generate greater investment and grow faster in the UK. Whilst the review focusses on science and technology, we note that the UK has particular strengths in the humanities, social sciences, and the arts, which have already shown spin-out capability. This presents the UK with a unique opportunity to build a world-leading innovation ecosystem that draws from all academic institutions and disciplines, and is more ambitious than a replica of Silicon Valley. Any world-class centre of spin-out creation needs a right mixture of:

- A diverse and experienced pool of academic founders, creating underpinning intellectual property (IP) and working closely with experienced start-up operators.
- Anchor institutions, particularly universities, enabling researchers to generate world-leading IP in science and technology, nurturing technical talent, and connecting and convening stakeholders in the local ecosystem.
- A range of service providers, from accelerators to professional service firms, competing to offer business and entrepreneurship support to spin-out founders.
- Accessible investment capital ranging from pre-incorporation translational funding to pre-seed/angel investment to other forms of capital, including venture capital investment, particularly from investors experienced in building high-tech start-ups.
- A mix of large science and technology corporations providing spin-outs with partnerships, access to global markets, and experienced technology leaders as co-founders or advisors.
- A supply of talented early employees to do the necessary work.
- Infrastructure (laboratory space, equipment, compute, housing, transportation) to support growing spin-outs and their employees, ideally within proximity to their anchor institutions to enable porosity between all elements of the ecosystem.

When these capabilities come together, innovation thrives.

There are very few places where these capabilities have come together to create world-leading spin-out ecosystems. The Bay Area, Boston, and San Diego are leading examples in the US. In the UK, the 'golden triangle' between Oxford, Cambridge and London has begun to exhibit many of these characteristics in the last few years and continues to evolve. Outside of the golden triangle, multiple new spin-out ecosystems are emerging, supported by partnerships between universities and investors such as Northern Gritstone, Midlands Mindforge and

SETsquared, but they have not yet matured to the point where IP, talent, capital, and support services are truly self-reinforcing.

Over the past two decades, UK universities have increasingly supported the growth of local spin-out ecosystems. Government funding supporting this has gradually increased through the Higher Education Innovation Fund (HEIF) in England, and universities are increasingly assessed on their commercialisation performance through the Impact component of the Research Excellence Framework (REF).

Universities recognise that entrepreneurship requires skills, experience, and infrastructure that they have not traditionally possessed. However, research commercialisation is something that an increasing number of academic researchers, staff, and students aspire to do as it enriches their research and teaching and can potentially yield a financial benefit. They expect such opportunities from a modern university. Universities have embraced commercialisation, also known as technology transfer, to different extents with the most active universities supplementing their traditional IP out-licensing functions with a growing mix of services for founders, including entrepreneurial training, venture formation and venture building services, translational funding, and seed investment. This has helped UK university spin-out investment increase five-fold from £1.06 billion in 2014 to £5.3 billion in 2021[1], second only to the US in total investment into spin-outs[2]. But it has also placed added financial pressure on already challenged university budgets that lack significant or any endowment, including philanthropy from their alumni, unlike their US counterparts.

In the long-term, the UK's objective should be to establish productive spin-out ecosystems with universities playing a vital role in establishing the public-private partnerships that mature the ecosystem. Supporting the creation of spin-outs must not result in a net cost for UK universities with already challenged operating budgets and declining real-terms tuition fees. Indeed, the current risk is that structural under-funding might deliver a reduction in such activity. While spin-outs can occasionally provide a revenue source for a university when a spin-out grows to become very valuable, they generally provide only a modest and unpredictable income source for universities, and should not be treated as a primary revenue source for commercialisation activities. It is important that some of the licensing revenue from a spin-out is returned to academic IP inventors and departments to incentivise academics to commercialise their research, and to help the university support the next generation of spin-outs.

The spin-out deal terms agreed between founders, investors, and universities has been a topic of hot debate. Data from a survey of founders conducted as part of this review and from other independent studies shows that, once different practices on royalties and equity dilution are correctly accounted for, deal terms offered by a growing number of UK universities have been moving towards – and are now comparable to – those taken in leading US institutions. However, more work is needed to bring all universities toward what this review identifies as best practice for the life sciences and other IP-intensive sectors, and to define what best

[1] Higher Education Business and Community Interaction, HESA, 2023, https://www.hesa.ac.uk/data-and-analysis/business-community/ip-and-startups
[2] Global University Venturing, "University spin-outs doubled fundraising in the last decade", 2023, accessed July 2023, https://globalventuring.com/university/spinouts-double-fundraising-in-ten-years/

practice looks like for less IP-intensive sectors such as software (in many instances), where there are a growing number of spin-outs being established every year. This review seeks to propose a way forward that properly reflects the crucial but differentiated role that founders, investors, and universities play in successfully creating and growing spin-outs.

This review puts forward recommendations to accelerate the UK towards a desired end state where: universities partner with their local spin-out ecosystem to prioritise the rapid creation of spin-outs on market competitive terms; academics are encouraged and better enabled to realise impact from their ideas through spin-outs, whilst universities develop an entrepreneurial culture throughout the entire institution; and founders can access the right commercial support to create successful spin-outs. We, as a nation wishing to encourage entrepreneurship, should celebrate when spin-outs achieve commercial success and founders make significant financial returns. We should share good practice and encourage wider collaborative public-private partnerships across the UK. However, in order to see the full value of early investment redound to the UK, it is essential that we as a country can continue to invest in these companies to ensure they can scale and stay in the UK. Ultimately, this will help grow the economy, attract more talent, and transform the UK into a science and technology superpower.

Professor Irene Tracey CBE, FRS, FMedSci & Dr Andrew Williamson

The recommendations of the review are:

Recommendation 1: Accelerate towards innovation-friendly university policies that all parties, including investors, should adhere to where they are underpinned by guidance co-developed between investors, founders, and universities.

- All parties should agree spin-out deals on market terms, avoiding unnecessary negotiations. Equity splits identified via TenU's University Spin-out Investment Terms (USIT) Guide can be used as a starting point for life sciences spin-outs (10-25% university equity) with exact terms varying depending on the wider commercial deal.

- Universities, investors, and founders to jointly develop guidance for (i) software spin-outs, where there is typically less university support and IP can be more straightforward to work around, and (ii) hardware and engineering spin-outs, which typically sit somewhere between software and life sciences. For less IP-intensive sectors, common in software-only spin-outs, typical deal terms should be much lower, with university equity of 10% or less.

- Universities, investors and founders to jointly build on the USIT guidance to develop a template for spin-out term sheets, similar to the US University Startup Basic Outlicensing Template (US-BOLT) to help streamline the negotiations process.

- Universities should have clearly stated expectations on time to complete the stages of the spin-out process by both the university and founders. University approvals needed for a standard spin-out should be delegated to trusted individuals and not taken by committees that meet infrequently.

- Founders should be encouraged to adopt amongst themselves proportionate equity distribution that both recognises the contributions to originating IP and continued intellectual support, but also the need to reward and incentivise those individuals who will commit considerable effort in taking the company forward.

Recommendation 2: More data and transparency on spin-outs through a national register of spin-outs, and universities publishing more information about their typical deal terms. The Higher Education Statistics Authority's ongoing review of the Higher Education Business & Community Interaction (HE-BCI) dataset must present solutions to improve the reliability of data on spin-outs.

Recommendation 3: HEIF should be used to reduce the need for universities to cover the costs of technology transfer offices (TTOs) from spin-out income. Given that HEIF equivalents are lower in the devolved administrations, the devolved governments may want to consider the findings of this review and provide additional support for their universities.

Recommendation 4: Create shared TTOs to help build scale and critical mass in the spin-out space for smaller research universities. These could be operated through collaboration with established university TTOs and could be implemented at a regional or sector-wide level. We note that the latter may be particularly of interest to spin-outs from the social sciences, humanities, and the arts.

Recommendation 5: Government should increase funding for proof-of-concept funds to develop confidence in the concept prior to spinning-out. These should integrate with the timing and offering of commercialisation support and venture-building programmes. Investors should lend their expertise to assessing funding bids for proof-of-concept and translational funds.

Recommendation 6: In developing the 'engagement & impact' and 'people & culture' elements of REF 2028, the four Higher Education Funding Bodies should ensure that the guidance and criteria strongly emphasise the importance of research commercialisation, spin-outs, and social ventures as a form of research impact. We encourage spin-outs to assist universities in drafting impact studies for REF.

Recommendation 7: Founders need access to support from individuals and organisations with experience of operating successful high-tech start-ups, regardless of the region founders are based in or sector they operate in. The existing landscape of support services needs both consolidation and targeted expansion to ensure that founders have access to:

- Advice, support, or representation in negotiations with universities and investors.

- Training on entrepreneurship and commercialisation.

- Support for business building activities: provide support to identify the commercial proposition of spin-outs, build a business a case, access customers, help connect

investors with spin-outs, and help identify experienced and diverse people to join as early employees, advisors, and board members.

- Access to part-time or on-call professional support in law, finance, or operations in early stages before permanent hires are needed.

- Access to shared equipment and facilities for rent.

Recommendation 8: UK Research and Innovation (UKRI) should ensure that all PhD students they fund have a voluntary option of attending high-quality entrepreneurship training and increase the opportunities for them to undertake internships in local spin-outs, venture capital firms or TTOs.

Recommendation 9: Recognising the important role that university-affiliated funds have played in helping spin-outs from some regions access finance, universities considering working with new affiliated investment funds should continue to ensure they are still able to attract a wider set of investors and encourage competition when agreeing such deals.

Recommendation 10: We welcome ongoing reforms to support scale-up capital, such as changes to pensions regulation and encourage the government to accelerate these efforts. Government should continue its reforms to ensure that UK capital markets are able to provide the financing to incentivise companies to stay in the UK.

Recommendation 11: Government should improve the provision of funds to enable movement or porosity between academia and industry, including through:

- Funds that ‘buy out’ academic time to focus on commercial partnerships and potential ventures. Or adapting funds for industry collaboration to be more accessible to spin-out founders.

- An ‘academic returner’ fellowship for researchers wishing to return to academia from the private sector.

Background

The number of spin-outs created has been steadily increasing over time. In 2021/22, 176 spin-outs were created, but this does not include staff or student start-ups not directly based on IP generated through a university's research.[3]

The government has been clear that key objectives of its growth agenda are for innovative companies to start and grow in the UK and to turn the UK into a science and technology superpower. To achieve this, the UK will need to focus on ways to translate its recognised academic standing into commercial and economic success. Generating impact from research is not only important for economic growth and productivity, it is also crucial for improving health outcomes and solving some of the biggest challenges the world faces such as climate change, infectious diseases, and food availability. Spin-outs are becoming an increasingly important mechanism through which university research impacts wider society, so it is appropriate that we carry out this review and identify opportunities to make improvements. The terms of reference of the review are in Annex A.

The early stages of a spin-out's life cycle are critical to its success. This review has investigated the establishment and early operation of spin-outs and identified key issues that need to be addressed:

- Frictions in negotiating spin-out term sheets
- The time taken for the spin-out process
- The role of UK government funding
- The ecosystem to support founders to build and sustain viable investment propositions
- The role of angel, venture, and other equity investors
- The ease with which academics can participate in spin-outs
- Encouraging an entrepreneurial culture within UK universities

There is widespread recognition that UK universities have a great deal of commercialisation potential which has led to numerous reviews of this topic in previous years. We have not sought to duplicate recent studies. Our review instead builds on the extensive literature, in particular the McMillan Review (2016)[4] and Mike Rees's 2019 advice to Research England (RE)[5].

The report's findings and recommendations have been informed by a series of interviews, roundtable discussions, external analyses, and targeted surveys involving a wide range of

[3] Higher Education Business and Community Interaction, HESA, 2023, https://www.hesa.ac.uk/data-and-analysis/business-community/ip-and-startups
[4] University Knowledge Exchange (KE) Framework: good practice in technology transfer, Report to the UK higher education sector and HEFCE by the McMillan group, 2016, https://www.praxisauril.org.uk/sites/praxisunico.org.uk/files/2016_McMillan.pdf
[5] Independent advice on university-investor links, Mike Rees Report, 2019, https://www.ncub.co.uk/insight/independent-advice-on-university-investor-links-mike-rees-report/

stakeholder groups. This includes government bodies, university leadership, spin-out founders, venture capital (VC) and angel investors, university technology transfer offices and other relevant organisations, such as research charities and the London Stock Exchange. The review has also received input from informed parties from other leading spin-out regimes, including the US, Switzerland, Canada, and Sweden. An advisory board was formed to inform the findings and recommendations, with representation from all key stakeholder groups (advisory board membership is in Annex B).

In conducting this review, we were interested in understanding the perspective of spin-out founders who are a heterogeneous group that are difficult to access through interviews and roundtables alone. We created a survey for founders to share their views on the spin-out process and information on the deal terms agreed for their spin-outs. The survey received 620 valid responses from spin-out founders[6]. A list of all spin-outs in the UK does not exist so a representative or random sample survey was not possible. However, the survey was distributed through a wide set of channels, including individual founders, universities, investment firms, research funders, incubators, and accelerators for maximum reach. Key findings are presented throughout the report, with detailed findings in Annex D (separate document).

[6] 620 valid responses remained following data cleaning. Multiple founders from the same spin-out could respond to the survey, therefore minimal cases of double counting may exist in some of the findings. Founders of multiple spin-outs were asked to respond for one of them.

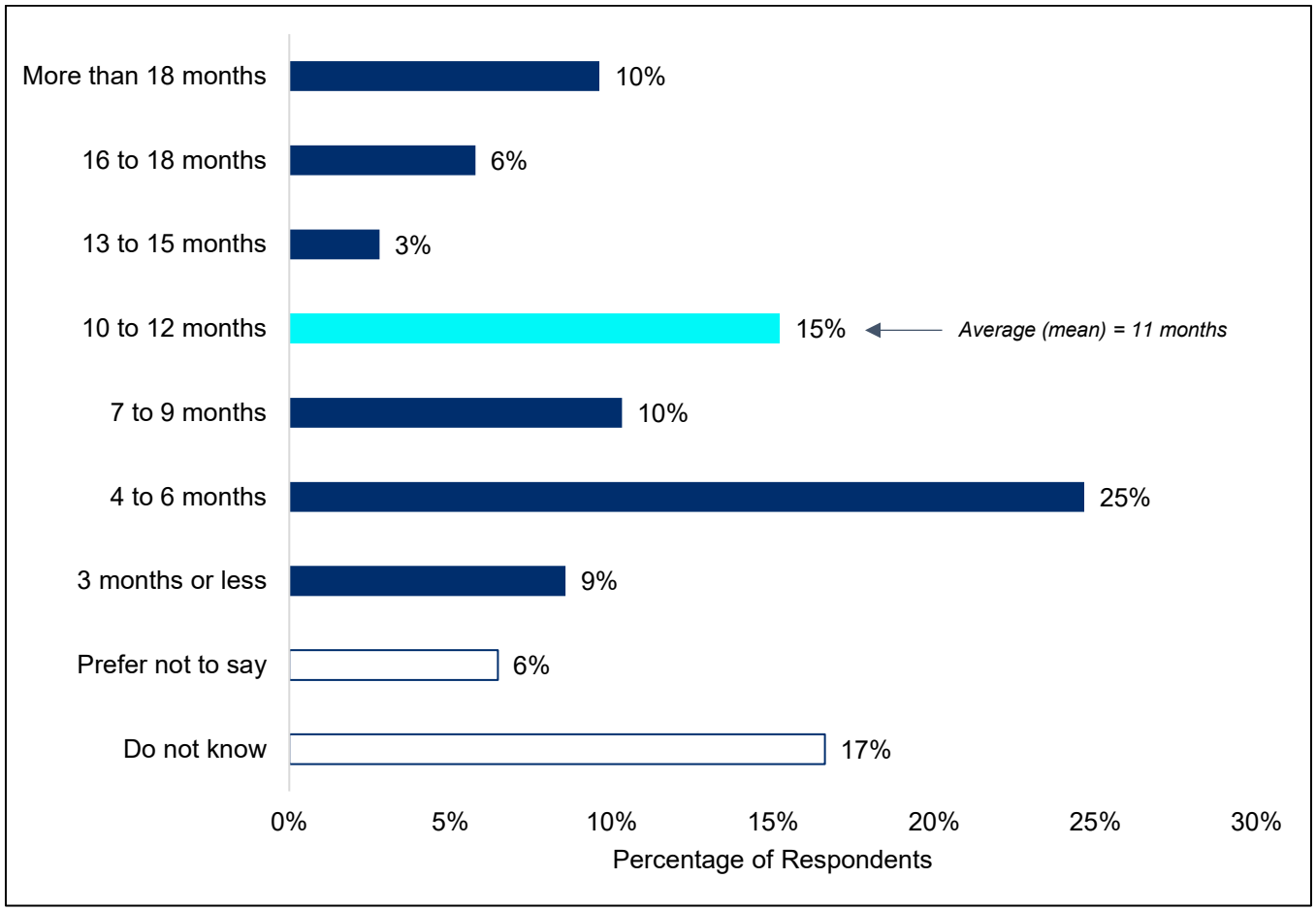
The spin-out process

The spin-out process typically begins with an ‘invention disclosure’ from an academic to the university. The academic informs the university that they have a discovery or technology with commercial potential. The technology is often at a very early stage so the academic may or may not have ideas about how to commercialise their research. The team in the university supporting commercialisation is typically called the technology transfer office (TTO). The TTO will work with the academic to analyse the potential commercial opportunity and decide whether to formally protect IP through a patent, at the university’s expense. The TTO and academic will then jointly decide whether to licence the IP to an existing company for a licensing fee or use it as the basis for a spin-out. If the technology requires further development (often referred to as translational, development, or proof-of-concept research), the university often supports this through translational research projects and grants, either from public funds or the university’s own.

There is a perception among some that the spin-out process can often take an unnecessarily long time, but there is no comprehensive data on the time taken for different steps in this process. Further, it is not always clear at which point the spin-out process truly begins and not all spin-outs follow the same linear journey. Figure 1, from our survey of spin-out founders suggests that most spin-outs take 4-12 months from the point at which the academic founder and TTO agree to spin-out to completing all necessary processes to having all agreements and paperwork complete to establish the company.[7] We worked with five TTOs to perform deep-dives into 17 spin-out case studies to better understand what factors impact the time taken to spin-out. The findings of this work support the survey results on time to spin out. They also revealed that the time taken to spin out depends on various factors, including finding co-founders, securing investment, agreeing the terms for the involvement of university staff in the spin-out and managing conflicts of interest, and carrying out patent due diligence. We also heard that sometimes investors or lawyers with little or no experience of working on spin-outs challenge industry-standard terms which can cause unnecessary delays. The case studies revealed some small sectoral differences. For instance, life sciences spin-outs tend to have complex IP and seek external executives, whereas software spin-outs tend not to have patents and are more likely to have a sole academic founder as CEO. However, this is not a hard rule and there are instances where software has multiple contributors which can present complexities.

[7] DSIT & HMT Spin-out Founder Survey.

Figure 1: Months taken to complete spin-out deal.



Source: DSIT & HMT Spin-out Founder Survey
Note: Base = 572 respondents.

We have heard that some universities operate inflexible stage-gate processes that can cause delays. Other universities require approvals to be taken by academic committees that meet irregularly and do not consist of commercial experts. It is important that universities continue to manage IP, conflict of interest, charity law, and subsidy control risks, but it is equally important that these technical matters are delegated to appropriately experienced individuals at the right decision-making levels. Although we are not recommending that a standardised spin-out process be implemented across all universities and all disciplines, it is worth universities reviewing their procedures for creating spin-outs to identify areas where it can be expedited and ensure founders' and investors' expectations are managed at an early stage.

The next sections look at the various stages of the spin-out process in more detail.

IP due diligence

One of the first stages of the spin-out process is due diligence on the IP and securing it. This requires checking the funding history of the research that led to the IP, which can go back decades and across multiple research institutions. For patents, this also involves running searches for related IP ahead of putting in an application. This may need to be in multiple

jurisdictions which inevitably adds time to the process. If knowhow is to be licensed, the due diligence can be more complicated due to the less formal nature in which knowhow is recorded. At this stage, it may be uncertain whether to create a spin-out or license out the IP.

Approval from research funders

University research is funded by a mixture of sources, including government grants, private university revenue, and third parties such as charitable funders or the National Institute of Health Research (NIHR). Third party funders (excluding industry) usually only fund a small proportion of research and are involved with around 10-20% of spin-outs created each year[8]. In these cases, the TTO needs to secure agreement from all third-party funders to commercialise the IP. These groups will typically want some return for their involvement although their drivers are not solely related to financial returns. Charities have statutory obligations which require all income-generating activities from their work to satisfy a public benefit test. It is appropriate for third party funders of research to be rewarded for their role in developing IP and technologies underpinning a spin-out, but the amount being sought should reflect the relatively small proportion of research that they fund, and it should only come from the university's share. The Association of Medical Research Charities (AMRC) guidance on commercialisation should be used as the basis for agreements with third party funders, with consents given within 30 days[9]. Encouragingly, we have seen evidence that the largest charitable funders are meeting this standard already. All other charitable funders should follow suit, and consent should not be withheld as a negotiating tactic with universities – the split of income can be determined with the university after consent is given. We have heard that government funders of research vary their practices – UK Research and Innovation (UKRI) operate on a principle of taking no share in IP income, nor requiring consents, whilst NIHR requires consents and revenue sharing. These funders should consider the findings of this review when updating their IP consenting and revenue sharing practices.

Spin-out executive management teams

Founders may wish to leave their university to lead a spin-out. The review has heard that this is more common with PhD students or post-doctoral researchers compared with principal investigators. However, some founders may feel more suited to act as Chief Technical/Scientific Officer and the spin-out may also seek a more commercially experienced individual for CEO. Founders will often wish to maintain some academic link or position whilst still being involved, part-time, or as an advisor/consultant, with the company. Flexibility is key and universities will need to continue to adapt and embrace different working models whilst not undermining their core mission of teaching and research. In some cases, there may be no academic founder willing to leave academia and the whole executive team would need to be recruited. Finding outside talent can take a significant length of time, especially where specialist skills are sought.

[8] Based on data shared with the review by NIHR, Wellcome Trust, Cancer Research UK and the Association of Medical Research Charities.
[9] https://www.amrc.org.uk/Listing/Category/ip

Access to finance

In some areas of the country with a less active equity investment market, the launch of the spin-out can be delayed by difficulties in finding an equity investor. The UK spin-out investment landscape is discussed further in the chapter 'Equity investment and the role of investors'.

Negotiating the spin-out term sheet

Negotiating the deal between the university, spin-out founders and investors is a necessary part of the spin-out process. However, sometimes the negotiations can take an unnecessarily lengthy amount of time which is partly why some universities have adopted a standardised set of express deal terms to speed up the process. This can be good practice, provided that the express deal terms do not inhibit investment and are considered fair terms as identified by this review. Other universities seek to negotiate deals on a case-by-case basis. This can work if negotiations proceed quickly and on fair terms.

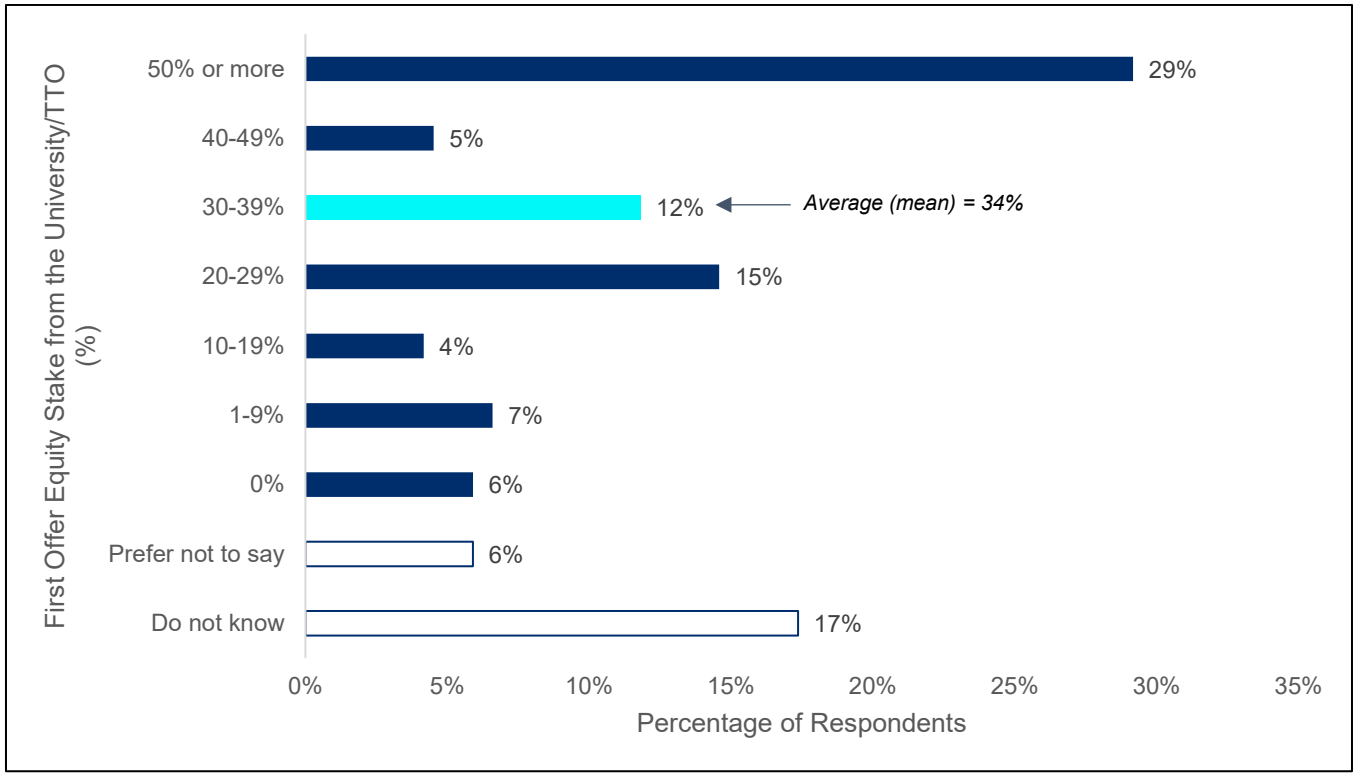
Arguably, the largest point of contention around deal terms is the equity share taken by universities. These have decreased from an average of around 25% to around 18% over the past ten years[10]. We have heard from investors that large stakes make spin-outs less attractive for investment. This is especially the case, at later rounds of investment or for international investors who may be accustomed to universities taking lower equity stakes. We have heard that spin-out founders need a sufficiently large stake to have the financial incentive to continue with a spin-out instead of pursuing other lucrative options: if the founders decide to leave, the investors' capital is at greatest risk as the spin-out is less likely to survive. Recent research suggests that larger university equity stakes reduce the chance of the spin-out receiving venture capital investment in less science-intensive companies, but not the amount of investment overall[11]. The impact is small, perhaps because alternative (but imperfect) ways are found to 'fix' the capitalisation (cap) table, for instance by giving large employee options pools to founders. A much better outcome would be to set-up cap tables at foundation so they do not require fixing later.

Most stakeholders agreed that through negotiation, it is usually possible to agree market competitive terms. Data presented to the review shows that many of the top UK universities are doing most deals at 5-15% equity, which is comparable to the US once different approaches on equity dilution and royalties are taken into account[12]. However, the process of negotiating down to this level is often unnecessarily difficult, leading to delay, legal costs incurred on all sides, and loss of goodwill between negotiating actors. This is partly because some TTOs have been slower to adjust their opening bids to reflect changing market norms, but can also be due to a minority of founders with an unrealistic view of their contribution to the spin-out demanding unreasonable terms. Our survey of spin-out founders revealed that negotiations on university equity stakes start at an average of 34%, but just over 1 in 4

[10] Beauhurst, "Spotlight on Spin-outs", 2023 https://www.beauhurst.com/research/spotlight-spinouts-2023/. Our survey had an average equity of 25% across all years, close to Beauhurst data.
[11] Thomas F. Hellmann, Junida Mulla and Matthias Qian, "How does Equity Allocation in University Spinouts affect Fundraising Success? Evidence from the UK", 2023, 2. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4416303
[12] US and other international practices are covered in detail below.

founders reported that their university's first offer was 50% or more (Figure 2)[13]. This is well above the level most investors would accept and founders would consider fair, and is supported by our survey which found that only 39% of founders agree that they received a 'fair and balanced deal' from the university, with 43% disagreeing (Figure 3)[14]. A productive negotiation needs to involve all sides starting from a place that is squarely within the bounds of the acceptable market norms described in this review.

Figure 2: Distribution of the first offer equity stake ownership from the university/TTO.

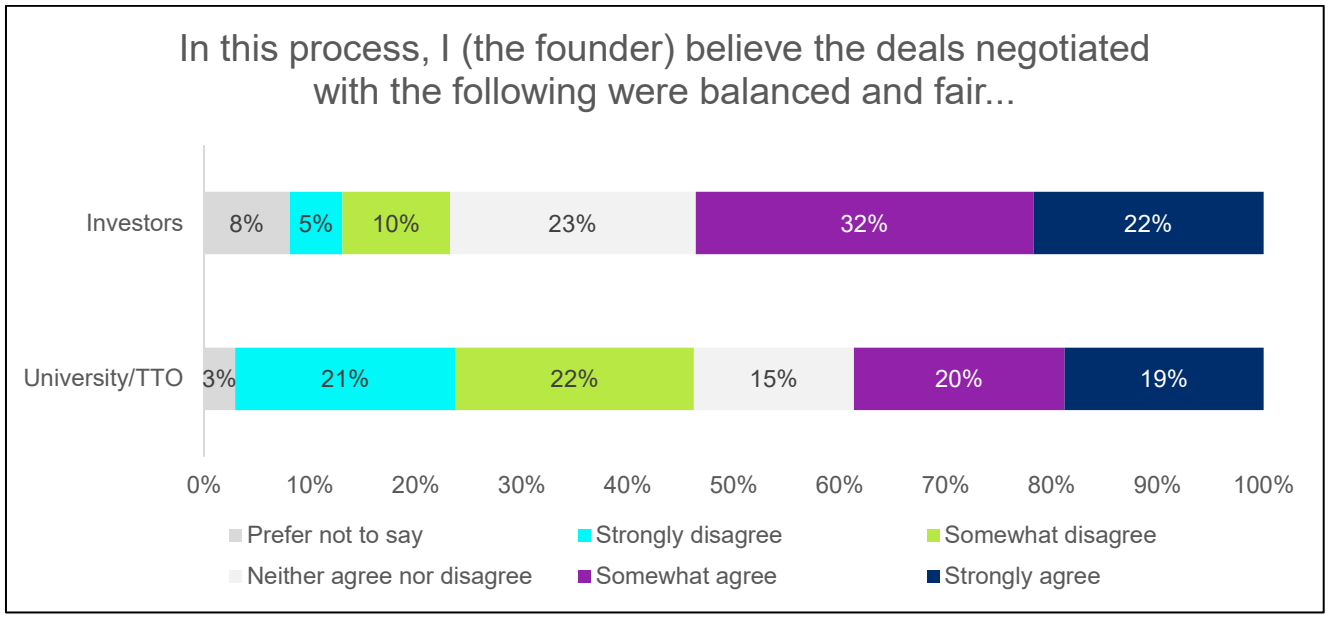


Source: DSIT & HMT Spin-out Founder Survey
Note: Base = 288 respondents.

Ensuring the spin-outs process is efficient and transparent is in the interests of all universities engaging in technology transfer. We expect that as entrepreneurship becomes something academics increasingly aspire to, they will pay closer attention to a university's commercialisation policies. Only around half of Russell Group universities publish their licensing policies, and this does not always include details of typical deal terms[15]. Universities should publish more information about their spin-out licensing and equity policies to help make negotiations fairer and attract more academics who are keen to create spin-outs. This will help create an entrepreneurial culture within universities and establish a strong pipeline of experienced academic founders to support the next generations of founders.

[13] DSIT & HMT Spin-out Founder Survey
[14] DSIT & HMT Spin-out Founder Survey.
[15] Review's own investigation of university websites

Figure 3: Founder's opinion on the fairness of spin-out deals.



Source: DSIT & HMT Spin-out Founder Survey
Note: Investors base = 542 respondents. University/TTO base = 542 respondents.

Under the Patents Act 1977 and Patents Rules 2007, the inventors of IP all have equal status. Universities usually leave it to co-founding inventors to decide who receives what share of founding equity in a company based on IP. The split of equity between founders joining the spin-out as permanent employees and those staying behind in the university (often operating as an advisor) has been found to be on average equal[16]. However, investors told us that they prefer that founders working permanently in the company own the bulk of the founding equity to reflect the risk taken by the founder in leaving academia. We agree that founders working permanently in the company should be properly rewarded and incentivised to continue engaging with the spin-out during what is often an uncertain and challenging process. Academics who remain in academia but work part-time or perform extensive consulting for the spin-out also need to be rewarded. Meanwhile, academics who played an important role in developing the IP underpinning the spin-out but who are not involved in the spin-out should be recognised. However, their contribution to the future success of the spin-out should not be overestimated. It is important that founders adopt amongst themselves proportionate equity distribution that recognises their important but differentiated role in the creation and success of the spin-out.

Early investors frequently participate in negotiations with the university to agree the spin-out term sheet. Founders that we have spoken to perceive investors' role as supporting them in negotiating a deal that works for the spin-out company and will facilitate future financing rounds. However, we have heard of examples where investors hold up a deal with unreasonable terms, or they have a lack of experience and understanding of what standard terms and practices are in university spin-outs, for instance, protection of academic freedom to perform further research using the IP underpinning the spin-out that they helped develop.

[16] Hellmann et al (2023).

We have heard that the main legal terms are similar in most spin-out deals, so starting from a common framework or template agreement could speed up negotiations and also provide less experienced universities, investors, and founders with a useful starting point for their negotiations. Although some universities have their own templates there isn't a standard that is shared between universities. Given that investors and lawyers typically work with multiple universities, the process may be usefully accelerated with shared template legal terms, similar to a template launched in the US last year (see section on international spin-out models).

TenU, a collaboration of university TTOs, has recently published the University Spin-out Investment Terms (USIT) best practice guidance of terms for university life sciences spin-out deals[17]. It proposes a market norm of 10-25% university equity for a life sciences spin-out licensing a patent with high support from the university. This is an appropriate upper limit on equity stakes for universities that reflects the more hands-on role universities often play in life sciences spin-outs, while also allowing flexibility for case-by-case adjustments. All universities, investors, and founders should be encouraged to land within this range for life sciences spin-outs and spin-outs involving high levels of support from the university. The USIT guidance is clear that a deal should be considered as a whole – the university taking high amounts on each of the equity, royalty and milestone ranges in the guidance would be a bad deal for a spin-out and make it less likely to attract investment and succeed. The USIT guidance is not just for universities, and investors should also pay attention to the guidance, in particular on the wider legal terms, to avoid lengthy negotiations over terms that universities are not able to accept or pushing deal terms outside of market norms.

It is important to reiterate that the USIT guidance is aimed at life sciences. Similar guidance on deals in software or deep-tech hardware is needed, and we encourage TenU to consider developing further guidance in close collaboration with a wide range of universities, investors, and founders. Further, it is our view that for spin-outs with software-only IP that is easier to work around and less capital intensive to develop, deal terms should be much lower, with university equity stakes 10% or less. This is in-line with, for example, Oxford's position for low-support and patent-less spin-out, or Imperial's position for software companies. This would accurately reflect the role university research plays in these types of spin-outs compared to spin-outs based on the life sciences. It would also still provide flexibility for case-by-case adjustments as technologies such as Artificial Intelligence evolve or if the spin-out is underpinned by a complex mixture of technologies such as life sciences and software.

Where universities or funds affiliated with a university invest directly in a spin-out on market terms these investments should be treated separately to equity granted to the university in payment for a license as these are commercial investments. This is a common point of confusion when the equity ownership of university spin-outs is debated.

Some universities have policies that enable an 'opt out' of university IP ownership and commercialisation, or they offer a 'founder's choice' commercialisation route involving less support from and lower equity stakes for the university. We have heard that maintaining the split between 'founder's choice' and university-led routes is challenging, with those initially

[17] https://ten-u.org/news/the-usit-guide

choosing the ‘founder’s choice’ route or ‘opting out’ often ending up needing support or using the support of third parties who may offer founders even less favourable deal terms – we consider this to be a sub-optimal outcome. Imperial College London has recently announced that it will now offer the same support to all founders who will be able to choose between a set of fair deal terms. Whilst an ‘opt out’ can provide choice, it is our view that if universities move to fair deal terms as per the recommendations of this review, there is no need to offer an opt out or founder’s choice route.

It is not only the universities with the largest spin-out portfolios and most developed private ecosystems that are setting best practice. The University of Sheffield has recently adopted a ‘founder focused’ commercialisation journey. They abandoned previous practice of starting equity negotiations at 50-60%, and now take 5-20%, with the exact amount determined on a case-by-case assessment. The university provides significant investment pre-spin-out of £150-300,000+ from funds created by previous spin-out successes. There is no strong reason why all research universities wishing to spin-out a company should not be able to adopt the recommendations in this review. As previous reviews have concluded, imposing a one-size-fits-all solution or a single cap for equity splits is likely to lead to unintended consequences. That is why our recommendations are focused on enabling all universities to develop their own innovation-friendly approaches, within a range of fair market norm terms. Annex C showcases and celebrates the successful journeys of some UK universities towards innovation-friendly policies.

Recommendation 1: Accelerate towards innovation-friendly university policies that all parties, including investors, should adhere to where they are underpinned by guidance co-developed between investors, founders, and universities.

- All parties should agree spin-out deals on market terms, avoiding unnecessary negotiations. Equity splits identified via TenU’s University Spin-out Investment Terms (USIT) Guide can be used as a starting point for life sciences spin-outs (10-25% university equity) with exact terms varying depending on the wider commercial deal.
- Universities, investors and founders to jointly develop guidance for (i) software spin-outs, where there is typically less university support and IP can be more straightforward to work around, and (ii) hardware and engineering spin-outs, which typically sit somewhere between software and life sciences. For less IP-intensive sectors, common in software-only spin-outs, typical deal terms should be much lower, with university equity of 10% or less.
- Universities, investors and founders to jointly build on the USIT guidance to develop a template for spin-out term sheets, similar to the US University Startup Basic Outlicensing Template (US-BOLT) to help streamline the negotiations process.
- Universities should have clearly stated expectations on time to complete the stages of the spin-out process by both the university and founders. University approvals needed for a standard spin-out should be delegated to trusted individuals and not taken by committees that meet infrequently.

- Founders should be encouraged to adopt amongst themselves proportionate equity distribution that both recognises the contributions to originating IP and continued intellectual support, but also the need to reward and incentivise those individuals who will commit considerable effort in taking the company forward.

Recommendation 2: More data and transparency on spin-outs through a national register of spin-outs, and universities publishing more information about their typical deal terms. The Higher Education Statistics Authority's ongoing review of the Higher Education Business & Community Interaction (HE-BCI) dataset must present solutions to improve the reliability of data on spin-outs.

Financing university technology transfer and proof-of-concept research

Licensing and exit proceeds

Through our discussions with TTOs, it is clear that most universities do not make substantial profits and can often lose money on their technology transfer activities. This is especially true of spin-outs which tend to be more expensive to support than licensing. In 2021/22, UK universities made £244 million from licensing intellectual property, and only £86 million from sales in shares, which collectively equal 2.1% of their research expenditure[18]. Income from both sources tends to be driven mostly by a small number of large successes, and both can fluctuate considerably year-on-year. This income is disproportionately weighted towards universities with the largest research incomes; the 6 universities with the largest research expenditure made around 50% of licensing income and around 60% of share sales income in 2021/22[19]. The total number of licenses has increased in recent few years[20], but the review has heard that large corporates are becoming less interested in direct licensing of university technology, especially for the most lucrative therapeutics licenses. Instead, corporate innovation is increasingly done by acquiring start-ups or spin-outs. Over the coming decades, there could be a shift from licensing to share sales revenues.

Universities clearly define the split of the income in their revenue sharing policies between the academic inventors, the department, the university's central funds and the TTO. The use of income back to the university and/or TTO is not public, but 26 universities provided the review with this information. Many universities have never seen a significant spin-out exit, so do not have defined purposes for this income were they to realise it. For universities with more consistent returns, income is typically recycled into ringfenced funds to support future spin-outs, or to fund more research. Even some mid-size universities invest millions of pounds each year in proof-of-concept research for future spin-outs. This can be before the spin-out exists or after it is created, co-investing with private investors due to lack of local equity financing. In some of the more successful universities, there may be potentially large profits arriving over the next decade, whilst others are just starting to make the case internally for ringfencing their returns as they start to become significant.

Government funds

Government provides funding for technology transfer through RE's Higher Education Innovation Fund (HEIF). In the academic year 2022-23, HEIF was £260m across England, and

[18] 0.8% of total expenditure. Based on HESA data on Intellectual property and OfS 2021-22 TRAC survey on expenditure. Licensing income can often be ringfenced by conditions, e.g., "must be spent on further research into [a specific disease]." Some licensing income will come from spin-outs, but only a small proportion.
[19] Based on HESA data on Intellectual property
[20] Ibid

for the first time ever an additional £20m was ringfenced for commercialisation[21]. HEIF is allocated based on the income universities receive for knowledge exchange activities – mainly contract and collaborative research, but also activities like licensing IP and selling professional training. Universities choose to spend HEIF on supporting any of these activities, not just patenting and licensing. From 2016-2019, universities spent 16% of HEIF on technology transfer; the figure was slightly higher at 23% amongst the most research-intensive universities[22]. In addition to this core funding for technology transfer to TTOs, universities allocate a large proportion of HEIF to seed funds, entrepreneurship training, incubators, and accelerators. However, it is not possible from existing data to determine the exact amount of HEIF spent on these other activities. HEIF can play an important role in helping incentivise universities to adopt the recommendations in this review. We note that the devolved administrations have their own version of HEIF: Research Wales Innovation Fund, Northern Ireland Higher Education Innovation Fund, and the University Innovation Fund (UIF) in Scotland. These are less generous than HEIF. For example, the University of Edinburgh received £1.7m UIF funding in 2021-22, but would have reached the HEIF cap and received around £5m if it was located in England. These are devolved policies which we will not put forward recommendations on. The devolved governments may, however, want to consider the findings of this review.

We have heard that some of the largest research universities tend to operate TTOs as subsidiary companies, with the long-term goal of achieving financial sustainability and returning some profits. Based on evidence from the 26 universities who shared data with the review, those outside the top 5-10 for research income almost fully fund their TTOs through HEIF, though financial models vary. We heard significant praise for the work TTO staff do, but also were repeatedly told that TTO staff are overworked and that bottlenecks can develop. This is not solely due to funding. It can be due to decisions on priorities, a lack of standardisation, or high staff attrition because of uncompetitive salaries compared with the private sector. Smaller research universities may only have one or two staff responsible for licensing with less than one spin-out per year. This may mean that employees and the university are less exposed to the market, less specialised in individual sectors, and less able to refine and streamline their spin-out processes. It may also mean that there is potentially under-exploited IP in smaller universities. For some smaller institutions, it may make sense to pool their technology transfer resources or partner up with a larger university with more technology transfer experience. This review has heard evidence of existing productive collaborations such as that between the universities of Manchester and Salford which we encourage more of. We recommend exploring setting up shared TTOs to achieve efficiencies of scale and quality of service to help more universities develop the capabilities to realise impact from the ideas developed by their academics. These shared TTOs could be implemented at a regional or sector-wide level. The

[21] UKRI, “Higher Education Innovation Funding”, 2023, accessed July 2023, https://www.ukri.org/what-we-do/our-main-funds-and-areas-of-support/browse-our-areas-of-investment-and-support/higher-education-innovation-fund/
[22] Tomas C. Ulrichsen, “Assessing the Gross Additional Impacts of the Higher Education Innovation Fund (HEIF). Technology transfer refers to the core activity of protecting and licensing IP, with the main costs being wages of technology transfer staff and patent protection costs. An update for the period 2015/16 – 2018/19”, 2020, 9, https://www.ifm.eng.cam.ac.uk/uploads/UCI/knowledgehub/documents/2020_Ulrichsen_Assessing_Impacts_of_HEIF.pdf

latter may be particularly of interest to spin-outs from the social sciences, humanities and the arts, which often come from universities located across the UK.

Research funding

University publicly funded research projects in the UK are generally funded at a loss. Around 41% of university research costs are publicly funded[23]. Projects are funded by research councils at 80% of their full economic costs, and charitable funders typically fund less. Universities top up this money with RE quality-related (QR) funding, and private income streams, including international student fees, and for very few universities considerable philanthropy. 25% of QR funding is now on impact, measured by case studies which can include spin-outs. The recent announcement that the UK will re-join Horizon Europe as an associate has been welcomed by academic, small business and industry sectors. This affords additional opportunities for discovery research and development.

TTOs told us that the wider university funding context makes it harder to make the case for universities to take a long-term view on the returns from licensing, invest in TTO budgets, and ringfence returns for future spin-outs. University stakes have dropped in recent years and HEIF has increased, but some universities have been slower than others to update their policies accordingly, and some technology transfer is still funded through licensing returns. It is plausible that only the universities with the largest research budgets will be able to generate a large enough portfolio to fund their TTOs solely through licensing and share sales in the short-term. Most of these institutions have already moved to deal terms within or near the recommendations in this review. Other university TTOs may require longer-term support to avoid being loss-making. We recommend that technology transfer be put on a firm financial position to remove pressure to use the returns, including through high equity stakes, to support TTO activities.

The four UK university research funding bodies have announced that the next iteration of the Research Excellence Framework (REF) will be scored 25% on ‘engagement & impact’, and 25% on ‘people & culture’[24]. This is being actively consulted on with the university sector at the moment. Impact case studies for the REF include spin-outs, but are not always scored based on outcome indicators such as investment, revenue, and jobs created. Spin-out companies should be open to assisting universities with drafting impact case studies for REF, as an important but low-cost way of giving back.

Proof of concept, translational research and development

Translational research or development is focused on developing early-stage research into practical solutions. This often involves developing a technical proof of concept or prototype. Funding for translational research can de-risk a spin-out and can come from multiple sources (Table 1). Although some programmes provide funding of over £100,000, these are limited in their availability. There are a larger number of grants of around £30,000-£50,000. The impact of this type of funding is striking. For example, spin-outs supported by the Medical Research

[23] Office for Students, “Annual TRAC 2021-22: Sector summary and analysis by TRAC peer group”, 2023, https://www.officeforstudents.org.uk/publications/annual-trac-2021-22/
[24] https://www.ukri.org/news/early-decisions-made-for-ref-2028/

Council's flagship translational funding scheme – the Developmental Pathway Funding Scheme (DPFS) – received equity investment, whilst those who narrowly missed receiving the grant failed to get any significant private investment[25]. The official evaluation of the Innovate UK (IUK) ICURe programme estimates that 75% of spin-outs created through the programme would not have happened without it (after controlling for differences between groups). Further, those founded through the programme received higher levels of equity investment than those who did not get onto the scheme[26]. Recipients of the ICURe follow-on fund also received greater private investment. Many of UKRI's translational funding schemes receive high-quality applications that cannot be funded due to budget limitations – the available evidence suggests that there is not a lack of quality translational research projects in the UK[27]. We have heard that sometimes spin-outs leave a university too early, simply in order to access funding that is only available to businesses, due to a lack of translational or development funds within the broader ecosystem. Spin-outs that are created too early are less likely to succeed. Academics have told us that the timing of translational and proof of concept funds, either with each other or with other grant funds is often unaligned. This can lead to projects stalling due to gaps in funding which can ultimately delay the spin-out process. Decisions on who gets funding are often taken by committees of academics who may lack experience and expertise on what research project has genuine commercial potential. We think there is a clear opportunity to review funding timelines to address the misalignment described above, and to consider including investors in funding award decisions to help ensure funding is directed to the research projects with the most impact potential.

Table 1: List of open call UKRI funds for translational research in universities[28]

Programme name	**Total annual spend**	**Maximum individual award**
Innovation to Commercialisation of University Research (ICURe)	£~15m	£300k for the follow-on fund. Up to £35k for all participants.
Impact Acceleration Accounts (IAAs)	£~40m across seven research councils, plus £~8m for place-based IAAs.	To be determined by the university, but typically under £100k
MRC Developmental Pathway Funding Scheme	£30m	No formal limit, but typically £1-2m
ERC Proof of Concept (Horizon Europe)	Part of Horizon budget. UK received 12 grants in the 2023 call	€150k

[25] Medical Research Council "MRC 10 Year Translational Funding Evaluation", 2019, p40 https://www.ukri.org/publications/mrc-translational-research-evaluation-report/
[26] Ipsos Mori, "ICURe Final Evaluation Report", 2020, p39, https://www.ukri.org/publications/icure-evaluation-of-pilot-programme/
[27] UKRI analysis shared with the review.
[28] Data provided by UKRI. This table only includes core, technology-agnostic programmes aimed at giving grants to academics for translational research. UKRI funds a much larger range of translational research in which universities participate, through Catalysts, missions funds and more.

We were told that funding for smaller universities and those in lower-income areas was supported by the European Regional Development Fund (ERDF), which had a focus on commercialisation and related areas that contribute to local economic growth. The UK Shared Prosperity Fund has not ringfenced funding for R&D in the same manner, which has led to a reduction in this support.

Alumni donations

Philanthropic funding of universities is less common in the UK than in the US, where alumni often make substantial donations. We have heard the argument that if universities improve spin-out deal terms, successful founders are more likely to look favourably on the institution and donate money to support future efforts. Whilst this cannot be relied on as a funding stream in the near-future, UK universities are beginning to explore this type of long-term thinking. Imperial College London's Entrepreneur's Pledge is a non-binding commitment for founders to consider giving a proportion of start-up exit proceeds back to the institution[29].

Recommendation 3: HEIF should be used to reduce the need for universities to cover the costs of technology transfer offices (TTOs) from spin-out income. Given that HEIF equivalents are lower in the devolved administrations, the devolved governments may want to consider the findings of this review and provide additional support for their universities.

Recommendation 4: Create shared TTOs to help build scale and critical mass in the spin-out space for smaller research universities. These could be operated through collaboration with established university TTOs and could be implemented at a regional or sector-wide level. We note that the latter may be particularly of interest to spin-outs from the social sciences, humanities, and the arts.

Recommendation 5: Government should increase funding for proof-of-concept and funds to develop confidence in the concept prior to spinning-out. These should integrate with the timing and offering of commercialisation support and venture-building programmes. Investors should lend their expertise to assessing funding bids for proof-of-concept and translational funds.

Recommendation 6: In developing the 'engagement & impact' and 'people & culture' elements of REF 2028, the four Higher Education Funding Bodies should ensure that the guidance and criteria strongly emphasise the importance of research commercialisation, spin-outs, and social ventures as a form of research impact. We encourage spin-outs to assist universities in drafting impact studies for REF.

[29] https://www.imperial.ac.uk/giving/community/entrepreneurs-pledge/

Building spin-out ideas into viable ventures

Founders' skills

Creating a successful spin-out requires a confluence of technical and commercial skills, as well as other legal, negotiation, and problem-solving skills, especially in a spin-out's early phases. Academic founders tend to be experts on subject matter and technical aspects with little or no formal commercial training, meaning that they often do not have the necessary non-technical skills to create a spin-out on their own, and sometimes may not have the skills or the desire to be a CEO. There are, of course, exceptions where an academic founder proves to be highly competent in these other areas and becomes a successful serial entrepreneur. However, in many cases, academic founders will need to build an executive team and work with a network of experts to help move from a cutting-edge technology to a viable commercial proposition. In addition, many spin-outs are in deep-tech sectors that require specialised skills and market knowledge that are difficult to come by. Even experienced investors or start-up advisors may be more used to the market dynamics of software start-ups than cutting edge therapeutics or quantum computing. Universities are increasingly offering PhD students access to training to develop commercial skills. This is an important step in establishing an entrepreneurial mindset and the necessary commercial skills in the future generation of academic researchers. Developing such a pipeline is something we encourage more of, but not at the cost of the PhD student developing, first and foremost, skills in their subject matter and completing their studies.

Support services and infrastructure for founders

The review has seen that there are many groups or individuals who will offer to support academic founders, but this is of variable value and founders often struggle to know who is both experienced and trustworthy. As a rule, in more mature ecosystems such as in the South-East, finding dependable mentors, board members, lawyers, and accountants is easier than in other parts of the country. But it can be more challenging to find space for growth and obtain necessary planning permissions, with demand for lab space outstripping supply in some of our more mature ecosystems. Solutions, such as using available university innovation space in other regions, are happening and bringing considerable benefits to both regions.

The government has provided funding for founders to access support services. For instance, RE's Connecting Capabilities Fund (CCF), which this year is allocating £60m of funding for the coming three years[30], has funded various accelerator programmes as well as the development of venture funds Northern Gritstone and Midlands Mindforge. Other programmes have leveraged the expertise and networks of university business schools to support commercialisation, such as the training provided through Creative Destruction Lab, or a course connecting MBA students to potential academic entrepreneurs, delivered by London Business

[30] https://www.ncub.co.uk/insight/research-england-as-an-ecosystem-builder-60-million-to-invest-in-commercialisation-success/

School. There may be opportunities for more programmes to be created that connect talent in business schools with those in technical departments across the UK, which we would encourage universities to consider.

There are an increasing number of private sector start-up accelerators and venture-builders operating around universities. These organisations will assist academic founders with negotiating licence deals, establishing a business, developing a business plan, pitching to investors and hiring an executive team. In return they typically ask for small equity stakes in the businesses, often operating seed investment arms. These services often overlap with the support that some universities provide but this is a positive development. Universities should welcome the competition and consider how their offering complements that of the private sector which may be in a better position to provide commercial support to founders. We consider best practice to be universities partnering with private providers, where they can complement each other's skills and expertise, such as the University of Bristol with Science Creates. The aim of policy should be to foster an ecosystem where all founders are able to access high quality services. Universities and funding bodies should encourage investors and venture-builders to get involved earlier in the commercialisation process, for example through helping assess bids for proof-of-concept funds (see recommendations in the chapter Financing university technology transfer and proof-of-concept research).

Building ventures outside science and technology

Founders from UK universities have pioneered spin-outs from the social sciences, humanities, and the arts, as well as those focussed on social enterprise or a non-government organisation (NGO) model. The ASPECT programme funded by RE's CCF has provided a support infrastructure for the first time anywhere in the world for spin-outs from these academic fields. It supported the adoption of Oxford University Innovation's 'lean spin-out' methods, recognising that these ventures are IP-light, have low capital requirements and, unlike most science and technology spin-outs, can start acquiring customers immediately. The Royal College of Art and Imperial College London recently ran a collaborative programme to connect scientists with designers to explore enterprise opportunities. These pilots are promising, and although it is too soon to see the long-term impacts, they illustrate the leading role UK universities and founders can continue to play at the vanguard of spin-outs from these academic fields. Universities should be supported to continue developing this ecosystem alongside traditional science and technology commercialisation. The UK's spin-out ecosystem can be unique and world-leading in helping address not only some of the major scientific and technological issues humanity faces, but also how to implement them through our understanding of policy and human behaviour.

Our vision is for founders to have a comprehensive offer of support that they can opt in or out of. This needs to be easily accessible, and available through a coherent set of schemes and initiatives that founders can transition seamlessly throughout their innovation journey: from pre-spin-out support to proof-of-concept research and technical development, into post-spin-out support of a more commercial nature. This will require stronger connections, collaborations and movement between different institutions and programmes to facilitate the scientist-to-entrepreneur career transition.

Recommendation 7: Founders need access to support from individuals and organisations with experience of operating successful high-tech start-ups, regardless of the region founders are based in or sector they operate in. The existing landscape of support services needs both consolidation and targeted expansion to ensure that founders have access to:

- Advice, support, or representation in negotiations with universities and investors.
- Training on entrepreneurship and commercialisation.
- Support for business building activities: provide support to identify the commercial proposition of spin-outs, build a business a case, access customers, help connect investors with spin-outs, and help identify experienced and diverse people to join as early employees, advisors, and board members.
- Access to part-time or on-call professional support in law, finance or operations in early stages before permanent hires are needed.
- Access to shared equipment and facilities for rent.

Recommendation 8: UK Research and Innovation (UKRI) should ensure that all PhD students they fund have a voluntary option of attending high-quality entrepreneurship training and increase the opportunities for them to undertake internships in local spin-outs, venture capital firms or TTOs.

Equity investment and the role of investors

Most spin-outs are based on early-stage technology that requires further development before becoming commercially viable. Due to the high overheads associated with R&D, most spin-outs rely on equity investment to fund their operations from the outset.[31] Equity investment, especially from venture capital (VC) funds but also from angel investors, corporates, and private equity, usually comes with commercial expertise to help guide the business strategy and route to market. Attracting finance was a key barrier to starting their spin-out that founders reported in our survey. This chapter explores the spin-out investment ecosystem in more detail.

Recent trends

Investment into university spin-outs has increased from £1.11 billion in the academic year 2015/16, to £5.29 billion in 2021/22.[32] This reflects a maturing UK equity investment ecosystem and funding environment which has developed over the past decade, with support from government institutions such as the British Business Bank (BBB). The latest data suggests that spin-out investment fell during 2022 and the first half of 2023[33]. However, the share of investment received by spin-outs remained in line with 2021 (at 11.5%) and has increased slightly in 2023 (12.5%). The fall in investment is also in line with the wider market slowdown since the middle of 2022, which has continued into 2023.[34]

Increasingly, UK universities are beginning to establish affiliated university investment funds to invest in spin-outs. These are private investment funds, separate from any internal seed funds the university may operate. However, the university usually has a role in establishing them, has seats on the board and may have an agreement with them providing favourable access to spin-outs to help de-risk the investor proposition.

The creation of university-affiliated funds has coincided with large increases in the number of spin-outs and the amount of equity they have raised. Before Oxford Science Enterprises (OSE) was founded, the University of Oxford launched 5-10 spin-outs per year. Since OSE was founded, it has launched around 20 in most years. Annual investment raised in Oxford spin-outs has also increased over the same period from around £100 million to over £1 billion.[35]

[31] Spin-outs also perform better than other companies on some metrics, for instance spin-outs raised 33% larger deal sizes (on average) than the wider market. British Business Bank, *Small Business Equity Tracker 2023, https://www.british-business-bank.co.uk/research/nations-and-regions-tracker-2022/*
[32] Higher Education Business and Community Interaction, HESA, 2023, https://www.hesa.ac.uk/data-and-analysis/business-community/ip-and-startups
[33] Beauhurst, *Equity Investment into Spinouts 2023*, https://www.beauhurst.com/research/equity-investment-spinouts-2023/
[34] Beauhurst, *Equity Investment Market Update H1 2023*, https://www.beauhurst.com/research/equity-investment-market-update-h1-2023/
[35] Based on HESA HEBCI data. This self-reported number by universities is often slightly higher than that estimated by deal trackers such as Beauhurst, who reported that Oxford spin-outs raised £743m of equity in 2021.

These funds can often help the university to improve licence deal terms, for instance OSE was closely involved in Oxford University's decision to introduce a new set of terms in 2021.

Recently, consortia of regional universities have created funds to help pool their spin-out portfolios. Northern Gritstone was launched in 2021 and has raised in excess of £300 million of capital which it is already deploying. Midlands Mindforge was announced earlier this year, in collaboration with eight universities, and is now raising funds. Given the challenges founders report in attracting investment, especially outside the South-East, these are welcome developments.

The earliest deals between investors and universities in nascent affiliated funds, which have now mostly concluded, often heavily restricted the university's freedom to engage other investors and competition in the local investment market. The newest deals, such as the one agreed between Northern Gritstone and three universities, are much more open and this trend should continue. Universities considering working with affiliated investment funds should ensure they are still able to attract a wider set of investors when agreeing such deals.

Distribution of funding

While the broader equity funding environment continues to grow in the UK, the distribution of equity funding continues to be concentrated in the South-East of England. In 2022, the BBB estimated that 66% of all equity investment to SMEs went to firms based in London.[36]

The 'golden triangle' of Oxford, Cambridge and London attracts a similarly high percentage of UK spin-out investment. According to HESA statistics, spin-outs from universities in the South-East, London and East of England raised £3.94 billion in 2021/22, or 74.5% of investment in spin-outs. This does not account for spin-outs from other universities which moved into the South-East.[37] Scotland performs comparatively well, receiving 17% of investment[38] but all other regions across England, Wales and Northern Ireland combined received less than 10% of investment.[39] BBB research also shows that the median golden triangle spin-out receives 4.6x more investment than the median spin-out outside this region, despite having fewer funding rounds.[40] Part of this South-East bias can be explained by the distribution of research universities and funding across the UK; however, the distribution of investment is more unequal than research funding, with stakeholders outside the South-East reporting difficulties in reaching investors.

This disparity in funding implies that the investment ecosystem is not uniformly mature across all parts of the UK with some regions structurally worse off. Smaller investment rounds and lower valuations means founders must give away larger equity stakes to investors. Similarly, if universities expect multiple small funding rounds will dilute founding equity heavily, it is rational

[36] British Business Bank, *Nations and Regions Tracker 2022*, 18, https://www.british-business-bank.co.uk/research/nations-and-regions-tracker-2022/
[37] Higher Education Business and Community Interaction, HESA, 2023, https://www.hesa.ac.uk/data-and-analysis/business-community/ip-and-startups
[38] ibid
[39] ibid
[40] British Business Bank, *Backing Innovation-led Businesses 2022*, 44, https://www.british-business-bank.co.uk/backing-innovation-led-businesses-2022/

for them to seek to take larger equity stakes or royalties and other payments with direct cashflows.

Investors that have less experience can often take longer to negotiate deals with universities as they are less familiar with which deal terms are important to universities, or which terms are genuinely disruptive to scaling a deep-tech business. Further, these investors may be less well-positioned to offer sector-specific advice and less effective on a spin-out company's board than more established competitors. The review heard from founders that non-local investors often encourage companies to move from their founding location. The largest movement of spin-outs domestically is from their university town into regions around London, Oxford, and Cambridge, although some do move outside of the golden triangle[41]. To ensure that the local area where a spin-out is created benefits from the employment and other local innovation spillovers, it is important for founders in all regions to have access to a competitive pool of experienced and sophisticated investors.

For some spin-outs, particularly those from the social sciences, humanities and the arts, access to high amounts of equity investment is not essential. Some spin-outs have customers and contracts lined up from their start and can earn revenues early on. This can make these spin-outs financially sustainable without the need for large amounts of venture capital that capital-intensive spin-outs which focus on developing a new product or technology often need.

The role of public finance

The BBB plays an important role in helping high-growth, innovative UK businesses like spin-outs access finance[42]. The BBB has itself invested directly in university-affiliated funds, including £30 million in Northern Gritstone. BBB supported funds made 130 equity investments in spin-outs between 2020-22, and 16% of the BBB's deals were made by the Northern Powerhouse Investment Fund and the Midlands Engine Investment Fund.

Whilst early-stage funding has grown over the past five years, especially in the South-East, the size of later-stage 'scale-up' funding has only recently begun to grow substantially and fell in 2022[43]. Only 5% of the spin-outs that Hellmann et al (2023) looked at raised over £25 million in total investment[44]. While scale up finance is beyond the scope of this review, it is clear that ensuring that university spin-outs can access the capital they need to scale is vital if they are to reach their potential and contribute significantly to economic growth.

Importantly for UK spin-outs and deep-tech companies, the establishment of British Patient Capital as a commercial arm of the BBB in 2018 has improved access to investment. The interim evaluation of British Patient Capital reported that it had been able to deploy nearly £1bn in funds targeting the equity scale-up funding gap[45]. More recent government announcements, such as the Investment Zones programme, Long-term Investment for Technology and Science

[41] Review's own analysis of Beauhurst data, based on Companies House registration addresses.
[42] British Business Bank, *Backing Innovation: University Spinouts Factsheet* https://www.british-business-bank.co.uk/backing-innovation-university-spinouts/
[43] British Business Bank, *Small Business Equity Tracker 2023,* https://www.british-business-bank.co.uk/small-business-equity-tracker-2023/
[44] Hellmann et al (2023).
[45] https://www.british-business-bank.co.uk/wp-content/uploads/2023/02/BBB-Interim-Evaluation-of-BPC-Final.pdf

(LIFTS) scheme and the Chancellor's Mansion House reforms demonstrate an ambition to increase investment into local areas and science and technology companies which we welcome.

In order to see the full value of early investment redound to the UK, it is essential that we as a country can enable spin-outs to scale and stay in the UK by continuing to ensure that the UK's capital markets – both private and public – are well placed to provide the necessary financing. This agenda has increasing political and regulatory focus, following the Lord Hill listing review and the ongoing reforms through the Smarter Regulatory Framework to UK capital markets, and supported by industry groups like the Capital Markets Industry Taskforce. In that context, we would encourage there being clearer expectations for companies to stay in the UK if they receive government support.

Venture capital schemes

The government provides three tax-advantaged venture capital schemes: the Enterprise Investment Scheme (EIS), the Seed Enterprise Investment Scheme (SEIS) and Venture Capital Trusts (VCTs). The schemes provide a range of tax reliefs for investment into small and growing companies. Over £3.6bn of funds were raised across the three schemes in 2021-22. In total, over £40bn of investment has been raised through the schemes since the EIS was launched in 1994[46]. All stakeholder groups we spoke to – universities, founders, investors and TTO professionals – highlighted these schemes as being particularly helpful for spin-outs. We encourage the government to continue these schemes.

Recommendation 9: Recognising the important role that university-affiliated funds have played in helping spin-outs from some regions access finance, universities considering working with new affiliated investment funds should continue to ensure they are still able to attract a wider set of investors and encourage competition when agreeing such deals.

Recommendation 10: We welcome ongoing reforms to support scale-up capital, such as changes to pensions regulation and encourage the government to accelerate these efforts. Government should continue its reforms to ensure that UK capital markets are able to provide the financing to incentivise companies to stay in the UK.

[46] EIS & SEIS statistics 2023 and VCT statistics 2022 https://www.gov.uk/government/statistics/enterprise-investment-scheme-seed-enterprise-investment-scheme-and-social-investment-tax-relief-may-2023 and https://www.gov.uk/government/statistics/venture-capital-trusts-2022/venture-capital-trusts-statistics-2022

Porosity between academia and spin-outs

Academics engage with spin-outs in two primary ways: either leaving their academic position to work permanently in the spin-out or acting as a scientific advisor to the spin-out whilst retaining their university employment. A much smaller number of academics maintain both university employment and an executive role in the spin-out, although above a certain size of company this becomes impractical.

We have heard that it is not straightforward to move readily between academia and entrepreneurship. University academics are required to carry out a certain amount of research, teaching, and administration. Most universities have told the review they have policies to enable academics to spend time on outside activities each year – typically around 30 days. This time can be used for private consulting, advising spin-outs or other activities. Numerous academics told this review that in practice, they will end up needing to perform these activities in addition to their main contractual obligations, often in the evenings or weekends. This can impact certain demographic groups more than others, with implications for the diversity of founders. Such policies can work well for consulting where parties will typically sign-up to contracted hours. They work less well with spin-outs where managing time spent between activities and conflicts of interest can be more difficult, especially early on when the boundaries between the spin-out and the academic research may be blurred. We have heard that universities and departments can be slow to approve joint working arrangements between academic labs and the spin-out. In our view, these issues are best worked out at an individual institutional and departmental level, but university policies and decision-making should seek to create flexible approaches that enable academics to participate in spin-outs without unnecessary friction.

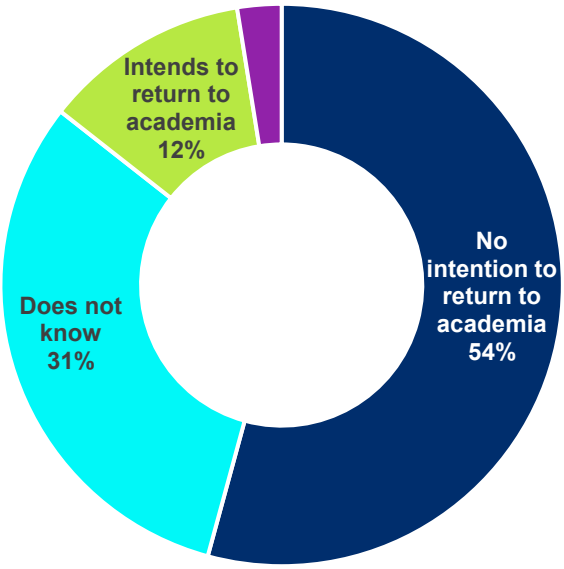
Leaving academia for a spin-out can be a significant risk to an academic career. Routes back are limited, as years spent on the spin-out typically reduce the number of publications or other academic outputs that academic hiring decisions are heavily weighted on. This is the case even for spin-outs with demonstrable impact. Of those in our survey who had left academia, over half did not have any intention to return, but 12% did and 31% were unsure (Figure 4)[47]. Academics might be more comfortable pursuing spin-outs if there were more opportunities to return to academia. Academic founders who choose to take on significant risk by trying to realise impact from their ideas should be supported if a return to academia is desired; however, we note it is a very competitive landscape and with funding limitations within the university sector other sources of funds to support returning-entrepreneurs would be welcome.

Most government support for movement between academia and the private sector is targeted at established companies. Government funding supports secondments or partnerships through programmes like UKRI's Knowledge Transfer Partnerships, or the Royal Society's Industry Fellowship. Gaining funding for working on a spin-out company can involve additional hurdles. Although it is right for conflicts of interest to be appropriately managed where an academic is a co-owner of a spin-out, funding bodies should make it easier for spin-outs to access these

[47] DSIT & HMT Spin-out Founder Survey

schemes. The government should consider exploring schemes that encourage more porosity between academia and spin-outs.

Figure 4: Intention to return to academia amongst founders who left to join the spinout.



Source: DSIT & HMT Spin-out Founder Survey
Note: Base = 118 respondents. Only founders who had left university employment or their PhD to join the spin-out were asked this question. A small percentage selected 'Prefer not to say' (3%), this is not labelled in the chart but is represented by the purple segment.

The challenges we describe above are amplified for women academic founders. In 2021, 67% of new founding teams were all male, although the gender balance has been improving over time[48]. Research into the participation of women in spin-outs indicates that founders of all genders face the same problems, but it is more difficult for women to persuade TTOs to invest in patents, to convince investors, and to convince boards or TTOs to keep them in leadership positions[49]. The barriers that women face in creating spin-outs are not dissimilar from the barriers women faced entering academia in previous decades. Universities should implement lessons learned from their experience in encouraging more women to enter academia to identify opportunities to support women academic founders in their spin-out journey. Investors also have an important role to play in encouraging more diverse founding teams and they should sign up to the Investing in Women Code[50].

[48] Beauhurst & Royal Academy of Engineering, *Spotlight on Spinouts,* 2023, https://www.beauhurst.com/research/spotlight-spinouts-2023/
[49] Griffiths, H., Grisoni, L., Manfredi, S., Still, A. and Tzanakou, C. (2020) 'The Spinout Journey: Barriers and Enablers to Gender Inclusive Innovation', Oxford: Oxford Brookes University Centre for Diversity Policy Research and Practice.
[50] https://www.british-business-bank.co.uk/about-us/our-values-and-culture/investing-in-women-code/

Recommendation 11: Government should improve the provision of funds to enable movement or porosity between academia and industry, including through:

- Funds that ‘buy out’ academic time to focus on commercial partnerships and potential ventures. Or adapting funds for industry collaboration to be more accessible to spin-out founders.
- An ‘academic returner’ fellowship for researchers wishing to return to academia from the private sector.

International spin-out models

This chapter explores international approaches to spin-out creation and technology transfer. It has informed the wider review, but no recommendations are made here.

The role of the TTO

MIT and Stanford are widely recognised as world-leading universities for creating spin-outs. They operate a 'pure play' model of TTOs that focus on providing commercial licenses to start-ups. These universities can afford to do this because of the strength of the entrepreneurial ecosystems that surround them, which consist of accelerators, incubators, investors and a network of experienced founders to collaborate with or seek advice from. The universities also provide various support functions and accelerators. Other US universities, even large research-intensive ones, that do not benefit from the same kind of entrepreneurial ecosystem operate more like UK universities, offering a wide range of support services and access to government funding via the TTO.

Sharing TTOs between research institutions has been explored in various countries[51]. In 2012, France established regional TTOs. We have heard that these organisations faced significant early challenges, partly due to resistance to them being imposed on institutions, but also practical challenges of unifying approaches across institutions. The greatest success of the French regional TTOs came from being accompanied by large pots of translational research funding, with businesspeople participating in scoring applications and awarding funds. Three Swiss universities collaborate successfully through the joint TTO Unitectra, although the largest Swiss universities have their own TTOs. We conclude that collaborations can work well for smaller universities who lack resources, but seem to work best when developed by universities, rather than imposed by central government. Our recommendations incorporate lessons learned from these case studies.

Spin-out deal terms

Although comprehensive data is not readily available, US stakeholders reliably report that their universities typically take 3-10% equity stakes, although this can vary case-by-case depending on the circumstances of the spin-out, the licensed technology, and the totality of the negotiated financial terms. In the US, universities typically take equity that is undiluted up to and including series A. Our analysis shows that this has approximately the same outcome for cap tables as the terms (dilutable equity) taken by leading UK universities (see the case study box below).

Some leading UK universities have experimented with equity dilution. Imperial University London offers its founders a choice of 10 or 20% dilutable equity (depending on the spin-out subject area) or 5% non-dilutable equity that is capped after a certain amount of investment

[51] See Fraser, Navarre & Stevens (eds. 2022), The role and contribution of multi-institutional technology transfer organisations, https://www.lesi.org/publications/les-nouvelles/les-nouvelles-online/december-2022

has been raised. Under these types of scenarios, there is no substantial difference between a low non-dilutable stake and a dilutable one that is 1.5-2x larger. However, there are various reasons why founders may opt for a deal in which the university takes lower, non-dilutable equity stakes. Founders may simply prefer to have a cap table in which the university has a smaller stake. Although we were told that many UK investors prefer not to complicate cap tables with non-dilution provisions, some overseas investors may be more accustomed to lower, non-dilutable equity stakes and be more willing to invest in UK spin-outs if they can make a direct comparison with investment opportunities in other regimes. However, a lower, non-dilutable equity stake does not guarantee that the university will end up owning a smaller share on exit.

The review has heard that UK universities are less likely to take royalties, or take lower rates than US universities, but there is not good data comparing approaches on royalties. Based on the review's exploration of published university policies, express licenses are more common in the US, with some universities typically offering three express licenses tailored for different sectors. Some US universities have also partnered with investors to create in 2022 a 'Basic Outlicensing Template' (BOLT), a template legal term-sheet that can be used to speed up the negotiating process and set expectations[52]. Our recommendations incorporate lessons learned from these case studies.

The leading Swiss universities, ETH Zurich and EPFL, told the review that they typically take single digits equity. Sometimes this is non-dilutable, but not always. In some circumstances where they have put additional resources in through specific programmes, they may licence for a higher percentage of equity, but never over 30%. They typically also take royalties, which vary from 1-3% depending on sector and technology.

University research funding

Top universities in the US and Switzerland both told the review they have stable financial positions, which removes pressure from the TTOs and university to recover costs through equity or royalties. A greater proportion of research income also tends to come fully funded by government, rather than mixed in with charitable or other funding as it is in the UK. TTOs in these regimes appeared to know the UK system somewhat and many proactively brought up the financial situation without being asked. These differences help explain some of the different approaches taken by universities in different regimes and supports our view that the UK's approach should be tailored to its strengths and constraints.

[52] https://autm.net/surveys-and-tools/tools/term-sheet

Case study – dilutive vs non-dilutive equity under Imperial College London's new policy

In the two examples below, a life sciences company has raised a £5m seed round at a £7m pre-money valuation. It then raises a £15m series A at £18m pre-money valuation, reaching the £20m threshold for non-dilution. A 10% employee option pool is topped up at each round. Whether the spin-out took the non-dilutive or dilutive option has minimal effect. If the spin-out managed to raise more money at better valuations, then the non-dilutive 5% stake leaves founders with more. But, if the spin-out took 3 funding rounds to reach the £20m cap, the non-dilutive option might leave founders with less.

At formation			**5% Non-dilutive: After Seed and Series A financing round**	
Entity	**Initial shares**	**% ownership**	**Total shares**	**% ownership**
Founder 1	425,000	42.5%	425,000	10.1%
Founder 2	425,000	42.5%	425,000	10.1%
University	50,000	5.0%	210,809	5.0%
Seed investors			817,308	19.4%
Series A investors			1,916,446	45.5%
Option Pool	100,000	10.0%	421,618	10.0%
Total	**1,000,000**	**100%**	**4,216,180**	**100%**

At formation			**20% dilutive: After Seed and Series A financing round**	
Entity	**Initial shares**	**% ownership**	**Total shares**	**% ownership**
Founder 1	350,000	35.0%	350,000	9.3%
Founder 2	350,000	35.0%	350,000	9.3%
University	200,000	20.0%	200,000	5.3%
Seed investors			775,862	20.6%
Series A investors			1,710,063	45.5%
Option Pool	100,000	10.0%	376,214	10.0%
Total	**1,000,000**	**100%**	**3,762,139**	**100%**

IP ownership

Some, although comparatively very few, universities or regimes operate a policy of IP being owned by academics, not by the universities – sometimes called 'professor's privilege'. Some academic literature suggests that this may increase the number of spin-outs, but a larger proportion of these spin-outs may be created to carry out further research and consultancy rather than to become high-growth ventures[53], which is not the outcome that supports the economic growth benefits we need in the UK. Professor's privilege gives academic founders freedom to operate independently of the university and the TTO. This can remove friction from working through universities, but can also lose important benefits offered by the university.

In Swedish law, academics own their own IP. A Swedish university told the review that in practice many academics end up coming to their university's TTO for support to secure IP and build the business into an investable proposition. These TTOs still negotiate a fee for this. We were told that academic IP ownership can slow down industrial collaborations, as businesses may be unclear if they are negotiating with the university or an individual academic. The university told us that they invest a large amount of time and effort in educating academics who will ultimately need to drive the commercialisation of their ideas. Notably, Swedish universities cannot provide financial or in-kind support such as facilities to spin-outs unless they have an ownership stake, as public organisations cannot support initiatives that are purely for private benefit.

The University of Waterloo in Canada operates a successful academic-ownership policy[54]. This case study demonstrates that this type of arrangement can work when the right culture and support systems are in place. The university reported that most of its academics were highly supportive of this policy. However, we were also told that the system requires strong TTO engagement and time spent educating faculty to incentivise them to commercialise their ideas and diligently protect their IP. For this policy to work, senior academics need to understand entrepreneurship and be willing to give permanent founders most equity. Despite Waterloo's culture of entrepreneurship, there are still some professors who try to take large founding stakes whilst staying employed by the university. It is worth noting that the university operates primarily in an engineering culture, where patents often have different values to biomedical research.

The evidence that is available on professor's privilege draws from a very narrow set of cases. This is because most other nations and universities operate a system of university IP ownership. Almost nobody told the review that professor's privilege would be a preferable model in the UK. Even those we spoke to in Sweden and Canada emphasised that they experienced similar challenges to the UK, including access to finance and finding commercial talent to lead a spin-out. We were told that professor's privilege could lead to disagreements between multiple inventors, and voiding IP if the right processes were not followed to secure the IP. There are some benefits to this model for universities to perhaps experiment with it.

[53] Kenney & Patton (2011) 'Does inventor ownership encourage university research-derived entrepreneurship? A six university comparison'; Hvide & Jones (2018) 'University Innovation and the Professor's Privilege'; Smith, Dahlstrand & Baines (2013) 'Reconsidering the Professor's Privilege'; Bengtsson (2017) 'A comparison of university technology transfer offices' commercialization strategies in the Scandinavian countries'
[54] Ibid, Kenney & Patton (2011)

However, it would not address some of the wider challenges that the UK ecosystem faces and there are legitimate questions over its suitability for biomedical research. There is also significant uncertainty about the costs and disruption that would be incurred from transitioning to the model.

Most international stakeholders acknowledged that the UK performs strongly on spin-outs when compared with other leading regimes. This is supported by the available evidence showing that the UK compares favourably to the US when levels of research funding are taken into account[55]. It was clear that different regimes and their institutions have adapted their approach to technology transfer to suit their circumstances, including the maturity of their entrepreneurial ecosystem, access to finance and talent, and sector-specific expertise they possess. We found no evidence of any silver bullets or strong arguments for fundamental reform of the UK's approach to spin-outs.

[55] https://www.ukri.org/publications/ip-related-and-commercialisation-activities-in-england-2021-to-2022/ p.35 Research England, 'IP-related and commercialisation activities in England: 2021 to 2022' p.35 https://www.ukri.org/publications/ip-related-and-commercialisation-activities-in-england-2021-to-2022/

Annex A – Terms of Reference

The UK university sector is a world-leader with four of its institutions ranked in the world's top ten universities. UK universities are also globally competitive on research commercialisation with Cambridge, Oxford, and Imperial College the second, third and fourth respectively in the world in terms of the number of deals in their spin-outs between 2013 and 2017. There has been a five-fold increase in UK university spin-out investment from £960 million in 2014 to £5 billion in 2021. There is, however, room for improvement, including the number of deals reached and value of investments raised to close the gap with the US.

University spin-outs are critical to the UK innovation ecosystem and have an important role to play in delivering the government's ambitions for the UK to become a science superpower capable of nurturing the world's next Silicon Valley. The Chancellor of the Exchequer and Secretary of State for Science, Innovation and Technology have therefore asked Professor Irene Tracey and Dr Andrew Williamson to lead an independent review of how UK universities spin-out companies to ensure that the right incentives are in place for the UK to lead the world in turning university research into commercial success.

This independent review will look at the distribution of performance across universities to identify best practice in university spin-outs and licencing deals. This will include comparing approaches in the UK to those of other world leaders such as the US, as well as looking at how approaches vary across the UK. The review will inform policy making to ensure that the UK continues to seed and grow innovative companies of the future and will build on existing evidence from previous studies of UK spin-outs.

The review will begin on 9 March and will end in the summer. It will:

- Compare the role universities play in the establishment and subsequent development of spin-outs across the UK and other leading jurisdictions such as the US, acknowledging that institutions that operate in different environments may vary their approach to commercialisation.
- Consider differences in the process involved and the time it takes to spin-out companies and agree licensing deals with institutions.
- Examine approaches to intellectual property and equity, assessing the relationship between equity retained by universities and on-going support provided by institutions to companies that are spun-out.
- Evaluate the role of angel and venture investment in supporting early stage growth of spin-outs.
- Assess any barriers academics experience in pursuing commercial interests alongside their academic work.

Based on the evidence gathered, the review will provide recommendations for government policy and for institutions aimed at ensuring the incentives are in place to maximise the gains

from university spin-outs, and increasing the economic contribution of spin-out companies to local areas and the UK as a whole.

A report will be delivered to the Chancellor of the Exchequer and Secretary of State for Science, Innovation and Technology.

Collaboration and consultation will form an essential part of the review. The reviewers and supporting team will partner with relevant stakeholders, including through informal advisory group(s), to understand the views of a wide range of investors and founders in producing the review.

Annex B – Advisory board members

An advisory board was brought together with representatives from all groups involved in creating university spin-outs. The group was designed to enable frank discussions of problems and solutions where all interests could be considered at once. The group have commented on the developing thinking of the review, but this report remains the work of the lead reviewers and does not necessarily reflect the views of board members. The board members were:

- Professor Julia Black, Strategic Director of Innovation and Professor of Law at the London School of Economics and Political Science (LSE). President of the British Academy.
- Professor Dame Jessica Corner, Executive Chair of Research England
- Martin Cox, Director of Business Development and Enterprise at Newcastle University
- Dr Harry Destecroix, Founder of the Science Creates Ecosystem and Managing Partner of Science Creates Ventures
- Dr Barbara Domayne-Hayman, KQ Labs Chair and Entrepreneur in Residence at the Crick Institute
- Chris Hopkins, Managing Director of Venture Capital at Legal and General
- Dr Karin Immergluck, Associate Vice Provost, Office of Technology Licensing at Stanford University
- Duncan Johnson, CEO at Northern Gritstone
- Ale Maiano, CEO at Wilbe
- Adrian Toutoungi & Ross McNaughton, Taylor Wessing
- Dr Jason Mellad, CEO and Co-Founder of Start Codon
- Lesley Millar-Nicholson, Executive Director of MIT Technology Licensing Office (TLO)
- Professor Sir Anton Muscatelli, Principal and Vice-Chancellor of the University of Glasgow
- Lord David Willetts, President of the Resolution Foundation. Former Universities and Science minister.

Acknowledgements:

We wish to acknowledge the outstanding support from officials from His Majesty’s Treasury and the Department for Science Innovation & Technology, especially Diego Duchi and Robin Polding. We would also like to thank Chas Bountra, Pro-Vice Chancellor for Innovation, from the University of Oxford for facilitating discussions with several stakeholders.

Annex C – University case studies

The following case studies were **provided directly to the review by universities and are presented unedited**. They are a representative but incomplete overview of good practice in the sector. The case studies are designed to show the journey that the university sector has been on over the last decade and more, from spin-outs being unfamiliar activity to being an established aspect of university life. The recommendations of the review are aimed at continuing this trend.

Imperial College London

Imperial is one of the world's top universities, with a greater proportion of world-leading research than any other UK university; innovation is part of our DNA. By managing our technology transfer work in-house, we have built a whole-university innovation ecosystem that enables us to integrate fully our commercial expertise with our research to drive impact. Our approach combines sector-leading commercial terms that are founder- and investor-friendly, with tailored support and infrastructure to give Imperial researchers the best chance possible to maximise impact from their discoveries. We provide support to Imperial staff and students for their entrepreneurship journey, from concept to growth or acquisition and beyond.

As the UK's only STEMB[56] specialist university, we have a critical mass of researchers working together across disciplines, and collaborating with other institutions, to address global challenges such as global health, security, climate, environment and energy transition. We bring to bear advances in emerging technology areas such as human and artificial intelligence, quantum technologies, robotics or engineering biology to create solutions to these challenges and opportunities for the UK.

Each year we spinout 10 or more companies from our academic research in addition to 30-40 student startups. Our portfolio of companies that started out as university spinouts includes leading UK technology firms such as Ceres Power and Nexeon. Notable exits for companies started at Imperial include Permasense, GraphicsFuzz, Process Systems Enterprise and Magic Pony.

In 2017, we piloted a new approach for the UK sector – Founders Choice - by introducing spinout options for founders to retain more equity. Based on extensive consultation with academics, founders and investors, in August 2023 we improved and consolidated our support programmes and alongside this we updated our founder terms. The new equity and licensing terms are intended to help our spinouts get started quicker and accelerate the journey to real-world impact from our discoveries.

Imperial is the only UK university to have introduced the non-dilute equity option, similar to many US models, which we offer alongside dilutable equity. We also recognise differences

[56] Science, technology, engineering, medicine and business

between market sectors by offering different founding equities for pharmaceuticals versus software and physical sciences companies.

Equity is not the only way to improve our founder experience, and we have delivered process and management improvements such as dedicated spinout project managers, alongside significant entrepreneurial support. We continue to expand our White City and Hammersmith Campus as an innovation platform, with spaces, facilities and networks to support and scale-up new companies. We remain committed to making our entrepreneurial ecosystem as diverse and inclusive as possible, with programmes such WE Innovate for women-led entrepreneurial teams.

Imperial plays a leading role in the UK innovation community, as an active member of TenU and a founding member of the USIT group that published expert guidance and best practice on investment terms for university spinouts in April 2023.

Imperial's ongoing work on deal terms for spinouts benefits from our unique innovation ecosystem, which includes founders and investors. By fully integrating commercialisation work with our other enterprising activities, Imperial maximises support for our researchers and students to develop their transformative technologies into products, services and solutions that improve the world, one technology at a time.

University College London

For over three transformative decades, UCL has been at the forefront of technology transfer, pioneering innovations that have reshaped industries and transformed lives and society. The journey began in the early 1990s when technology transfer was an internal university function, moving to a wholly owned subsidiary company, UCL Business (UCLB), in the early 2000s. This evolution catalysed the development of a balanced approach to innovative, agile intellectual property identification and commercialisation that encourages investment and commercial partnership.

This approach has delivered highly successful outcomes from across UCL's diverse and multi-disciplinary research base, including 75 spin-outs that employ over 2100 people and have attracted $2.75bn of external investment.[57] One of the best examples is in cell and gene therapy, where UCL is now a recognised global leader. In 2013, UCL researchers developed a gene therapy that had the potential to be curative for severe haemophilia A. This new type of treatment would replace the current regime - three times a week hospital dosing of Factor VIII - with one injection in a lifetime. UCLB protected the IP and began negotiations with Biomarin Inc, a US based biotechnology company, to create a clinical development programme and bring the therapy to market. Discussions with the company led to the structuring of a licence where UCLB's consideration was distributed across the lifetime of the agreement to achieve an appropriate balance of risk and reward for both parties. Most importantly the first patient was treated this year.

[57] HEBCI 2018-22

This licence was the basis for the commercial terms for a broader range of cell and gene therapy programmes that became the foundation of a portfolio of spinout companies. Between 2013 and 2016 Autolus, Orchard, Achilles, Freeline and MeiraGTx were established in conjunction with highly experienced life sciences investors including Syncona and F-Prime, corner-stoning some of the largest Series A investments seen in Europe at that time. UCLB balanced the amount of equity it took in each company against its licence terms, to avoid onerous financial obligations that may have impeded progress. These companies have collectively raised over $3bn including listings on NASDAQ. Neither the IP licences put in place at the time of company formation, nor the equity received by UCLB, have proven a barrier to investment.

UCLB went on to establish the Portico Ventures initiative in 2018 for spin-out based on non-patentable IP (i.e. software and know-how). Companies receive an exclusive, royalty-free IP licence for a low, fixed, non-dilutable (until a pre-determined investment amount is reached) equity stake. Odin Vision, a world-leading pioneer of cloud AI-enabled applications for endoscopy, combining UCL's strength in AI and medical technology to detect some early stage colorectal and oesophageal cancers where early diagnosis is critical, was one of the first Portico companies, and was acquired by Olympus in late 2022.

The UK's university spin-out play a vital role in addressing today's global societal and economic challenges. A strong funding environment and informed investors sharing the risks and rewards equitably is key. We welcome the review's recommendations for university spin-out and believe that these new guidelines and frameworks will help to ensure that the UK continues to be a leader in research commercialisation.

University of Bristol

The University of Bristol has a rich history of research commercialisation, and the creation of spin-out companies has a prominent place in our University strategy. Vice-Chancellor and President, Professor Evelyn Welsh, explains:

"Spin-outs are an excellent way to maximise the impact of the University of Bristol's outstanding research while creating new jobs, economic growth, and other significant social benefits. As a university and as a city, Bristol is one of the best places to create and grow a company. We are committed to making the processes involved as transparent and seamless as possible."

We have been spinning companies since the 1990s, with a steadily increasing output – typically we now spin around 4-6 companies per year. Every research commercialisation prospect is unique and we make the decision as to whether, how, and when, to spin on a case-by-case basis and in close discussion with the researchers and other stakeholders. That notwithstanding, we have long recognised the need for transparency and rigour in our approach and have openly published our spin-out policy on our webpage for several years. We regularly review our approach with reference to best practice at UK and international institutions, and are reviewing the policy again now to further adapt it with the benefit of the 2023 Government review of spin-outs.

Particular highlights of our spin-out portfolio include:

- KWS Biotest, established in 2003 to provide contract research services for biotechnology and pharmaceutical companies, became Bristol's first significant trade sale exit when it was acquired by US-based Charles River Laboratories in 2018.
- Semiconductor chip company Xmos, founded in 2005, had a turnover of $24m last year, and itself spun out Graphcore.
- Revolymer was Bristol's first IPO exit, floating on AIM in 2012. Following a merger it now trades as sustainable polymers company Itaconix.
- Bristol's largest exit to date was Ziylo, founded in 2014 to develop glucose binding molecules for monitoring and control of diabetes and sold to global healthcare company Novo Nordisk in 2018 in a deal worth around $800m.
- Bristol has generated one of the largest clusters of quantum companies in the UK, with recent University spin-out raises including PsiQuantum (raised $450m Series D investment in 2021), KETS Quantum Security (£3.8m in 2021), QLM Technology (£12m in 2022) and Phasecraft (£13m in 2023).

Bristol has a thriving innovation ecosystem with a substantial and growing provision of incubators and accelerators, and is increasingly attracting the attention of a wide range of investors. Beauhurst have ranked Bristol 6th equal in the UK for numbers of spin-outs and #4 for number of equity deals. Through SETsquared, we take particular pride in the numbers of founders from underrepresented backgrounds in our portfolio, and work continues to further improve and share our approach. 80% of our spin-outs are still active at 3 years post-incorporation, which we believe reflects the richness of this ecosystem, combined with the strength of our research and the tailored approach we take to guiding academics through the spin-out journey. Harry Destecroix, alumnus, founder of Ziylo and the Science Creates incubators and now a venture capitalist, explains why Bristol is so special:

"Over the last five years, the University of Bristol has seen a number of game-changing spinouts emerge, catalysed by research excellence. From Quantum to AI through to engineering biology, the deep-tech -as well as the entrepreneurial eco system, such as VCs, dedicated incubators and accelerators - has been thriving and is starting to be globally recognised. And it is only just getting started!"

University of Cambridge

The University of Cambridge is a global leader in research and translating that research to create economic and social impact. The University has focussed on technology transfer and ecosystem development over many decades.

It was Trinity College, Cambridge that developed the UK's first Science Park in 1970. This decision was critical in Cambridge becoming a leading global innovation ecosystem with over 5,000 research intensive companies active in the ecosystem.

The University of Cambridge has a pro-entrepreneurship culture focused on maximising impact, not commercial returns. Our IP policy is structured to encourage innovation across our research community and provides flexibility to inventors. The University of Cambridge is recognised for having a low equity model for spinouts. In addition, the majority of returns from commercialisation income are distributed back to inventors, Departments and Schools. This creates a positive feedback loop.

A recent economic impact study, by London Economics, found that the University of Cambridge attributes annually £23.1bn of the £29.8bn economic impact to the University's research and knowledge exchange activities (including commercial companies spun out from, or closely associated with, the University).

Cambridge Enterprise, which leads the University's innovation activities, was established in 2006. It provides a range of supports to the University from patenting, proof of concept investment, licensing, venture investment, consultancy, accelerators, co-working space and ecosystem development.

Cambridge Enterprise is proactive in developing spinouts from venture building to company acceleration, through to providing investment capital and providing space for them to grow. We have created over 150 spinouts that have raised >£3bn in venture funding over the last decade.

We also co-established Cambridge Innovation Capital to provide scale up funding from Series A onwards and we continue to work closely with them in scaling spinouts.

An exemplar spin-out that demonstrates the power of our ecosystem is Cambridge GaN Devices (CGD) a fabless semiconductor company. CGD, was co-founded in 2016 by Dr Giorgia Longobardi and Professor Florin Udrea. The company was created to develop opportunities arising from the team's proprietary application of gallium nitride (GaN) to the silicon-based semiconductor transistor manufacturing process.

The company won the 2016 Postdoc Business Plan Competition run by Cambridge Enterprise, securing an initial investment of £20,000. The company secured a Pre-Seed convertible loan of £75,000 through Cambridge Enterprise, who also participated in the Seed and Series A rounds ($9.5m) before handing on the baton to sister investor Cambridge Innovation Capital at Series B ($19m). CGD is based in a science park established by a Cambridge College and continues to rapidly scale.

University of Dundee

Dundee has pursued technology transfer continuously since 1988, via its Research & Innovation Services (RIS) Directorate. Initially, arms' length licensing was promoted but the balance shifted towards spin-outs, reflecting UK economic imperatives and the growth of angel investment syndicates in Scotland. Dundee has also become increasingly industry-facing since the late '90s. We recognised that having excellent research (aggregate REF performance for Biological Sciences over 2014 & 2021 was #1 in the UK) is a prerequisite for successful translation but is not sufficient, so we created "translational engines" to lower

barriers for our scientists to engage with industry and form new companies. Translational assets include:

- Division of Signal Transduction Therapy ("DSTT") (since 1998). One of the longest and largest R&D collaborations between academia and the global pharmaceutical industry. DSTT partners have included Pfizer, GSK, Boehringer Ingelheim and Merck KGaA.
- The Drug Discovery Unit (DDU) (since 2006) translates discovery science (local & UK) into pre-clinical drug candidates. With 130 FTEs and turnover >£12M pa, DDU is the largest academic unit of its type globally, staffed predominantly by industry-trained scientists.
- Our Centre for Targeted Protein Degradation (CeTPD) (2023). Dundee has a world-leading position in protein degradation, a "hot" area for the Pharma industry given its potential to create drugs for previously untreatable diseases. Boehringer Ingelheim, Almirall and Eisai collaborate with CeTPD on R&D to design new degraders for various diseases.

Our Spin-out Policy (2006) aims to (i) encourage and enable staff to commercialise; (ii) "pre-incubate" companies and (iii) help them win investment. Key changes in recent years include:

- Commercialisation Groups in our Schools (from 2016) to scout opportunities and accelerate the most promising. Driver: increase volume at high quality
- Creation of our Centre for Entrepreneurship (CfE) in 2016 to spread entrepreneurial culture, and support staff, student and alumni start-up entrepreneurs. Drivers: democratise entrepreneurial opportunity, improve investment success.
- Use of a light touch Spin-out Panel to approve RIS recommendations (2019), instead of a Committee with fixed meeting dates. Driver: improve timeliness
- Implementing stage-gated process (2021) with external assessors, and internal investment at each gate, to drive the most promising opportunities towards commercialisation. Drivers: use RIS resources more effectively, improve timeliness.

Our success has been recognised independently, including rising from 6th to 1st in the UK in the Octopus Ventures 2023 Entrepreneurial Impact Rankings.[58] Highlights include:

- Exscientia – 2012 spin-out led by Prof. Andrew Hopkins (ex-Pfizer), one of the world's fastest growing AI-drug design companies, with >500 employees and floated on the US NASDAQ (2021) with post-IPO valuation US$2.7bn.
- Amphista Therapeutics – 2017 spin-out founded by the Director of CeTPD. Incubated initially in the University, rapid growth saw a US$58M Series B round complete in 2021. Co-development deals signed with global pharma partners in 2022 are worth c.US$2.2bn.

[58] https://octopusventures.com/wp-content/uploads/sites/16/2023/09/OV-Spinout-Report-_Sept-2023-1.pdf

- My Way Digital Health – 2017 spin-out from Dundee's Medical School that uses a connected suite of patient-centred apps and web platforms to monitor and control diabetes.
- DDU outputs include: 6 drug assets progressed to clinical trials (for malaria, leishmaniasis and oncology); 9 assets licenced to Pharma; 6 licences to spin-outs and start-ups.

We aspire to increase the volume, quality and impact of our spin-out portfolio. Equally importantly we want to anchor our high-growth spin-outs and start-ups in our economically disadvantaged City, for economic benefit. To support the latter, we are building a £40M Innovation Hub backed by the UK/Scottish Government Tay Cities Deal. The Hub will incubate companies across BioPharma, BioTech, MedTech and Computational Biology/Chemistry. It will cornerstone a new Life Sciences Innovation District in Dundee, in which we are partnering with Dundee City Council and Scottish Enterprise.

University of Edinburgh

The University has significantly accelerated commercialisation and industry engagement over the past five years. Supported by Edinburgh Innovations (EI), the University's commercialisation service, we have achieved a threefold increase in industrial and translational income; record numbers of student startups and staff spinouts, and significant income from licensing and venture capital. We have achieved this through three main building blocks.

Specialised Support

First, we built up a specialised service of 170 FTE, providing a professional, comprehensive support for all aspects of innovation.

This includes our Business Development teams, embedded within the University's schools, which build positive relationships to guide all stages of commercialisation and negotiations.

We restructured our Tech Transfer team to provide high quality support to spinout and collaboration activity. An innovation disclosure portal has streamlined process and facilitated engagement.

We work in a highly integrated way, with technology transfer specialists, enterprise advisors, investment team members and legal support working collectively to provide a high value service.

Support is also provided to entrepreneurial students through an extensive set of events, programmes and individual advice. Specific programmes have been developed to encourage female founders. The online Startup Community Platform facilitates collaboration and team formation.

Incentivising Academics

Second, we introduced a range of incentives to engage academics and encourage innovation activity. Surplus from industrial awards is now shared between the school and academic. We

have also introduced distribution policies for consultancy projects to return the majority of income to academics for their own research. Innovation is recognised and rewarded through annual review and promotion criteria.

Investing in Success

The third building block is our suite of seed funding and investment.

Translational Funds such as the Wellcome Institutional Translational Partnership Award (iTPA) support early career researchers with a complete early-stage funding pathway.

We work collectively to consider the needs of inventors, founders and investors to ensure a smooth process for spinouts and company creation.

Investment has become an important component of our offering. Old College Capital (OCC), the University of Edinburgh's in-house venture investment fund, instrumental in supporting spinouts and startups, with a commitment from the university to reinvest returns.

In parallel, we are working with the 6U, a leading group of University Tech Transfer offices, to share experience and best practice. Together we have published and adopted, the University Spinout Investment Terms (USIT) Guide.

Outcomes/successes

	2017/18	2022/23
Companies launched by staff and students (inc start-ups and spin-outs)	55	123
Value of industrial and translational awards	£37.3m	£91.9m
Investment into associated companies	£16.3m	£107.6m

Ambition

We are expanding our strategic partners in Scotland, the UK, the US and Asia, focused on a set of Innovation Engines where we have a strong value proposition and potential for partnership development and investment.

The world-class health innovation district at Edinburgh BioQuarter will drive further commercialisation of life sciences.

Within five years we intend to double the number of academics engaged with Edinburgh Innovations. To this end, we are strengthening our Innovation Career Path, creating a compelling route for recruiting and nurture innovation-focused careers.

As a first step towards this goal, we recently established a new Innovation Fellowship scheme, recruiting a cohort of 10 Fellows, to launch outstanding early career researchers on innovation careers.

University of Glasgow

The University of Glasgow is taking a highly proactive approach to supporting its innovation ecosystem and in raising its ambitions for increasing spin-out ventures and associated commercialisation activity. The University recently published its Innovation Strategy and is investing in resources to double its performance across all innovation-related metrics. In doing so, it is evolving its guidance and processes to create a more conducive environment for spin-outs including terms that are increasingly favourable to founders and enabling to investor friendly deals. The current policy ensures that the University takes no more than 30% founding equity (pre-investment) with the flexibility to take less. Further changes to the policy will see the University position evolve to it taking no more than 20%.

The consequence of university's progressive approach has resulted in founding equity (irrespective of the level of support) being typically between 12% and 25%. Typically, this shareholding is further diluted pre-investment to enable companies to engage executive talent and to create stock option pools for future employees. The license terms have also been modified in response to founder and investor requests to include patent assignment triggers, royalty buy-out options and sufficient sub-licensing rights to enable business model execution. The ventures formed in the last 5 years have raised over £55m to date and employ approximately 120 people.

Chemify Ltd is one of the ventures formed. The company was founded in 2019 by Prof Lee Cronin (CEO) with backing from Cambridge based entrepreneur and investor David Cleevely. Following a seed round in 2022 the company, in June 2023 announced the completion of a Series A led by Triatomic Capital, with a total raise of £36 M. Triatomic were joined by new investors including Horizon Ventures (Hong Kong), US-based Rocketship Ventures (US), Possible Ventures (US), Alix Ventures (US), Eos Advisory (UK) and the UK Government Innovation Accelerator program. Existing investor BlueYard Capital (UK) also participated in the round.

Based in Glasgow the business is focused on building products based on decades of research led by Prof Cronin in the combination of chemistry, robotics and artificial intelligence undertaken in Cronin's Digital Chemistry Laboratory. These products significantly reduce the amount of costly and time-consuming experimentation required to discover promising new molecules for applications in medicine, farming, The company now employs over 50 highly skilled computing science, engineering and chemistry graduates.

In September, Chemify announced a collaboration with Dewpoint Therapeutics to discover molecules that target cancer and neurodegeneration. This collaboration will focus on using Chemify's platform to discover and automatically synthesise new molecules against Dewpoints disease targets. Dewpoint will make clinical, regulatory milestone and royalty payments on exercising their option to acquire any of Chemify's compounds.

The university is supportive of the UK Spin-Out Review recommendations and endorses the approach.

University of Oxford

Oxford's innovation story has grown over 35 years. Oxford University Innovation enables academics to maximise the impact of their research through IP licensing, company creation including spinouts, social ventures and start-ups, and support to student entrepreneurs and academics through its incubator programme and consulting services.

Policy and process changes and their drivers:

- Oxford Science Enterprises (OSE) was founded (2015) to invest in Oxford University spinouts across the deeptech, healthtech and life sciences. OSE has invested in 105 equity deals in spinouts valued at £1.45 billion and has brought in 200 co-investors.
- Oxford's founder equity policy was revised (2021) to 80% for founder academics and 20% for the University (pre-money, fully dilutable).
- OUI in partnership with OSE created a Spinout Express Licence to facilitate fast and effective IP licencing into spinouts. This option is open to all spinout companies and is widely adopted.
- OUI collaborated with the SixU Universities and a group of active investors to create the University Spin-out Investment Terms (USIT).

These policy changes support the University's aim to foster innovation and entrepreneurship, provide clarity to researchers and investors and help to streamline negotiation and make spinout formation more straightforward and transparent.

Outcomes and Successes:

OUI's first Impact Report, published October 12th 2023, includes details of OUI's financial returns to the university and many examples of Oxford's economic and societal impact from the spinout companies created by OUI.

Oxford has created more than 300 companies, many of which have successfully scaled and exited supported by funding OSE and other investors.

Oxford Nanopore Technology was ranked as the top IPO by a spinout by market capitalisation, valued at £3.38 billion.

Together with the University, Oxford's companies, and OUI's partners in the regional ecosystem, is helping support £3.4bn of economic impact per annum,[59] and the creation of over 28,000 jobs.

[59] Based on 2021 London Economics report Economic Impact of the University of Oxford for 2018-2019 period.

Examples of Flagship Spinouts:

- Osler Diagnostics: Total equity raised: £144m Incorporated: 2016. Osler Diagnostics has developed a portable lab with the aim of making lab-quality diagnostics more accessible. The company has raised £144m across five fundraising rounds, with £73.8m of this coming from a single deal in November 2022.
- MiroBio: Total equity raised: £133m. Incorporated: 2018. MiroBio develops pharmaceuticals aimed at treating autoimmune diseases. It was acquired by Gilead Sciences for £356m.
- OMass Therapeutics: Total equity raised: £123m. Incorporated: 2016. The Oxford-based spinout aims to further drug discovery for immunological and orphan diseases. It raised £80.2m in equity investment in 2022 from investors including Google Ventures and Oxford Science Enterprises.
- YASA Motors: Total equity raised: £49m. Incorporated: 2009. YASA's electric motors lead performance in their class and they manufacture 100,000 motors a year in Oxfordshire. In 2021, the company was acquired by Mercedes Benz for an undisclosed sum.

Ambition on Spinouts:

- To realise OUI's vision of a world leading innovation ecosystem with Oxford University at its heart.
- To increase the number of spinouts created per year to more than 30.
- To grow Oxfordshire's thriving regional ecosystem, by supporting investment opportunities and the attraction of talent for Oxford spinouts.

University of Sheffield

The Commercialisation Journey is the University of Sheffield's structured programme for innovators to explore opportunities for creating spin-outs or securing intellectual property licences. The transparent four-stage programme includes an extensive package of one-to-one support, training, business development and significant cash investment. The process de-risks spin-outs for Founders and stakeholders while efficiently developing investable business cases.

The Commercialisation Journey was developed through consultation with Innovators and Founders and draws on the wealth of knowledge and experience within the Sheffield Commercialisation Team who have supported incorporation of twenty-five spin-out since 2017. The Commercialisation Journey is financed by Higher Education Innovation Funding (HEIF) and other University budgets. It is designed with innovators at the heart of the process and equips them with necessary skills and tools to make informed business decisions.

Sheffield launched a redesigned Commercialisation Journey in January 2023 having trialled new commercialisation methodologies and flexible spinout equity and licence policies. Commercialisation concepts were tested during the Research England-funded Connecting Capabilities Fund - Northern Triangle Initiative (2018-2021) in collaboration with The University

of Leeds and The University of Manchester. The three universities then incorporated and partnered with Northern Gritstone Ltd, which has raised in excess of £300 million of capital to invest into northern early-stage science and innovation businesses.

The development of The Commercialisation Journey necessitated the review of Sheffield's IP, consultancy, revenue share and spinout equity policies. New policies, where required, were adopted following review by the University Senate. Sheffield also developed a mechanism to make six-figure pre-seed cash investments to support Founders to de-risk their ventures for all stakeholders and prepare cases suitable for private investment. Notable spin-outs include Phlux, Opteran and Rinri Therapeutics.

Sheffield's Commercialisation Journey integrates with the innovation and civic ambitions of the University. Sheffield is working with local government to support spinout founders to establish their companies within South Yorkshire and become leaders within the local innovation ecosystem.

A flexible equity policy supported the development of The Commercialisation Journey and enabled Founders to develop industry-relevant capitalisation tables. However, bespoke negotiation of terms frequently delays investment, so Sheffield is considering adopting fixed equity and licence terms. Sheffield continues to invest in Founders and their spinout companies while adopting policies that align with this review's recommendations.

Sheffield looks forward to working with partners in local and national government to ensure spin-out have the resources and infrastructure required to grow in Sheffield and South Yorkshire.

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