

Spotlight on Spinouts

UK academic spinout trends
April 2022

Contents

Foreword	1	Stage of evolution of live spinouts	20
Executive summary	2	Fastest-growing spinouts	21
		Exit volumes	22
		Top exits	23
Chapter 1: Overview of spinouts	3		
Top origin universities	4		
Spotlight on universities	5	Chapter 4: Leadership	24
Top spinout clusters	7	Leadership demographics: gender	25
Spinning out across the UK	8	Leadership demographics: age	26
Dominant spinout sectors	9	Director nationalities	27
Chapter 2: Funding sources	10	Chapter 5: Equity stakes and IP policy	28
Rising investment into spinouts	11	Equity stakes methodology	29
Top investees in 2021	12	University and founder stakes	30
Average investment size	13	University equity stakes	31
Top investors	14	Average university stakes	32
Spotlight on early investors	15	IP policy reviews	33
Innovate UK grants	16	IP policy sourcebook	38
Spinouts in the pandemic	17		
		Appendix	40
Chapter 3: Survival, growth and exits	18	Full report methodology	41
Spinouts survival rates	19	About the contributors	42



Maria Dramalioti-Taylor, Enterprise Committee Member at Royal Academy of Engineering, Founding Partner at Beacon

Spotlight on Spinouts 2022 is a collaborative report sponsored by the Royal Academy and prepared by Beauhurst on the current status of the university spinout economy in the UK. We are excited to share this with you. This is the second year of publishing this report, and we intend to make it an annual event in the hope that it will help us track what works for spinouts — and what doesn't — so that we collectively take action.

The Royal Academy of Engineering's Enterprise Hub has as its mission to increase the number and quality of high-growth engineering and

technology companies that solve some of society's most pressing challenges. The Hub works through its programmes to create lifelong connections between its award winners and its network of fellows who act as experts each year — and takes no stake in any of these companies. So far, over 277 researchers, recent graduates and SME leaders have been supported since the Hub was established in 2013.

Our work provides us with a unique insight and an independent voice on university spinouts: our understanding is rooted in the experience of individuals and the day-to-day realities of what it takes to spin companies out from universities. This allows us to play a pivotal role in national discussions on the commercialisation of university owned IP — by producing discussion papers, hosting roundtables, and providing evidence for government inquiries.

As with last year, we've collected a breadth of data on spinouts — from geographic location and universities of origin, to investment trends, demographics of founders, scaleups, exits and more. This year, we also examine some of the mid-performing universities in terms of spinout numbers, as well as taking a closer look at a few spinouts in the context of the COVID-19 pandemic.

Some may argue that spinouts represent only a slither of commercial activity in the UK. We counter such

thoughts by noting that university spinouts are attracting some of the brightest academic minds and address significant, "Horizon 2" problems in the engineering and technology sector whilst also being the conduit for commercialising valuable research from UK universities. They are high-risk but can also bring high reward, as demonstrated by the substantial exits since the 2020 report. For an investor, they present particularly interesting opportunities, especially in the current, post-COVID era, where the accelerated digitisation of enterprises is collapsing the adoption timelines of leading edge technologies.

This data on spinouts, collected in one document, makes for interesting reading, especially in the contexts of the pandemic and of the UK government's ambitions to become a 'science superpower'. Nations worldwide pay attention to what we do in the UK (whether we think that's a good idea for them or not!). Spinouts also support the government's ambitions to "level up", as fledgling businesses in different parts of the country face different ecosystems of tech transfer, investment and more. There is much in this report to interest policymakers and other stakeholders, including these highlights:

- The number, and value, of equity investments secured by academic spinouts has increased substantially over the last decade, rising from 209 deals with a

combined total value of £405m in 2012 to 389 deals worth £2.54b in 2021.

- In 2021, the average equity deal reached a ten-year high at £6.70m, marking a 72% increase from the previous year and a 233% increase from 2012. A number of high-value deals contributed to this.
- The life sciences sector dominates the list of companies with the largest market capitalisation: nine out of the ten largest market capitalisation spinouts are in the life sciences sector.
- Data is not available on ethnicity, which is a key barrier to driving change.

We are grateful to the stakeholders which helped with our analysis. We particularly thank the university technology transfer personnel who have collaborated with Beauhurst to provide up to-date data. The Academy has other initiatives in the pipeline related to spinouts — including a handbook aimed at academic entrepreneurs wishing to spin out of their university, workshops, deep-dive blogs and more. We will be publishing this report again early next year and for the foreseeable future, and we urge those with thoughts or insights to get in touch with the Academy.



Henry Whorwood, Head of Research and Consultancy at Beauhurst

Beauhurst has tracked over 50,000 high-growth and innovative UK businesses since 2011. 1,628 of these businesses are spinouts from the UK's academic institutions: that's just 3% of the high-growth population. Spinouts represent only 0.03% of the UK's overall company population (4.7m). But they punch well above their weight.

This is true in terms of the amount of private funding they raise. The average equity investment into UK private companies last year was £3.90m; the average equity investment into UK spinouts was £6.70m.

This is true in terms of the amount of grant funding they receive.

12.6% of the UK's high-growth and innovative businesses have received funding since 2011 from Innovate UK; 50.7% of the UK's spinouts have grant funding from the same source.

“What makes spinouts really stand out — and one of the reasons they warrant this full report of their own — is the quality and potential of the intellectual property and innovations they are commercialising.”

And it's also true in terms of the exit successes of these spinout businesses. 10.4% of the UK's spinouts have exited (i.e. been successfully acquired or completed an IPO), compared to 8.4% of the wider high-growth population.

But what makes spinouts really stand out — and one of the reasons they warrant this full report of their own — is the quality and potential of the intellectual property and innovations they are commercialising. That the top sector for spinouts activity is pharmaceuticals speaks to this potential: if these businesses are successful, lives won't just be enhanced or improved, they'll be saved.

Key figures:

1,628

Total number of spinouts tracked since 2011 in the UK.

£2.54b

Record level of investment into the UK's spinouts in 2021.

£6.70m

Record average investment size into spinouts in 2021 — a 233% increase since 2012.

436

Total spinouts created by the top three universities in the UK: University of Oxford, University of Cambridge, Imperial College London.

415

Total spinouts in the top two sectors: pharmaceuticals and AI — 5 spinouts operate in both sectors.

1

Overview of spinouts

- Top origin universities
- Spotlight on universities
- Top spinout clusters
- Spinning out across the UK
- Dominant spinout sectors



Top origin universities

Since the publication of last year's *Spotlight on Spinouts*, there have been changes to the figures and ranking of top origin universities. This is primarily due to an increase in the number of companies spinning out in the last 12 months. However, as Beauhurst's analysts continuously update our platform's data, this

report also includes spinouts that have been disclosed to us well after the fact. These factors have contributed to considerable movement in the leaderboard. For example, the number of companies spun out from the University of Oxford increased dramatically from 156 to 193. Similarly, the University of Manchester

rose from 10th in the last ranking to 5th, as the number of spinouts tracked since 2011 grew from 39 to 73. Spinouts can also be reclassified as startups, so numbers may go down as well as up. As such, figures will continue to change to reflect new knowledge, such as changes in grants or fundraising rounds.

Top origin universities by total number of spinouts tracked since 2011 (January 2022)

University of Oxford	193	Heriot-Watt University	24
University of Cambridge	137	University of Aberdeen	23
Imperial College London	106	University of Ulster	22
University College London	88	King's College London	21
University of Manchester	73	University of Dundee	17
University of Bristol	66	University of Surrey	16
University of Edinburgh	58	Cardiff University	16
Royal College of Art	58	Loughborough University	15
Queen's University Belfast	50	Science and Technology Facilities Council	14
Swansea University	48	Durham University	14
University of Warwick	45	University of York	13
University of Strathclyde	45	University of Bath	13
University of Southampton	41	Queen Mary	13
University of Birmingham	39	Lancaster University	13
University of Sheffield	38	University of St Andrews	12
University of Nottingham	36	University of Liverpool	11
University of Glasgow	34	City University	10
Newcastle University	34	University of Sussex	9
University of Leeds	26	Coventry University	9
University of Exeter	26	University of East Anglia	8

Spotlight on universities

The following spotlight universities have been selected according to their ranking in last year's edition of this report, *Spotlight on Spinouts 2021*. These universities placed 11-20 in that list, and despite often being overshadowed by institutions with more established commercialisation teams, have

generated plenty of successful spin out companies. From this cohort of universities, the University of Warwick hosted the largest number of companies, spinning out 38 businesses as per last year's report, and 45 in this year's edition. They were followed by Strathclyde and Birmingham, which launched

38 and 35 companies per last year's data, and 45 and 39 according to this year, respectively. Despite some movement in the rankings, the universities featured on this page have remained in the 11-20 spots in this year's report.

University of Warwick

Located in Coventry, the University of Warwick has spun out 45 companies. The majority of these businesses (68.9%) have raised equity investment, with a total of 115 fundraising rounds worth £168m taking place since 2011. There have also been four exits via acquisition by University of Warwick spinouts.

University of Strathclyde

Since hosting its first spinout event in 2002, the University of Strathclyde has commercialised their research to create 45 companies. Of these businesses, 75.6% have secured equity funding, raising a combined total of £142m of investment. The largest of these rounds (£35.9m) supported the mycoprotein developer ENOUGH.

University of Birmingham

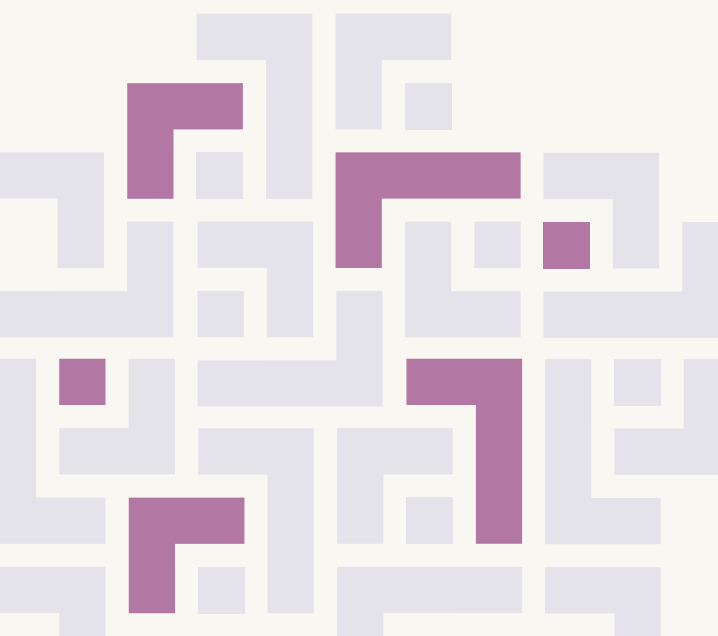
There have been a total of 39 companies spun out from the University of Birmingham, including three that have been acquired: The Native Antigen Company, Serascience and Impression Technologies. The businesses established at the University have raised £172m of equity investment from 79 fundraising rounds.

University of Southampton

There have been 41 companies spun out from University of Southampton since 2011, with 21 of these (51.2%) raising equity. Across 84 fundraising rounds, these companies have secured £165m of investment. Contributing significantly to this are four funding rounds, worth £28.4m, hosted by fibre-optic cable company Lumensity.

University of Sheffield

The University has hosted 38 spinout companies, with 55% of these having raised equity investment worth a combined total of £102m. A number of these businesses (55.3%) are still at seed-stage, including Rinri Therapeutics which develops stem cell treatments for hearing disorders.



Spotlight on universities

These universities, ranked between 16-20 in last year's edition of *Spotlight on Spinouts*, have also successfully commercialised a range of research developed at the institution. The University of Glasgow, for example, originated 29 spinouts as per our 2021 report, rising to 34 in this year's data.

Similarly, companies originating from the University of Nottingham also increased considerably, rising 50% in the past year from 24 to 36. The other institutions featured on this page have launched a number of businesses: the University of Leeds hosted 26, Newcastle University

spun out 34, and 24 businesses were initially founded at Heriot-Watt University.

University of Glasgow

A total of 34 businesses have commercialised research from the University of Glasgow. The University's Research Strategy and Innovation team have supported a wide range of companies, spanning sectors such as clean energy, pharmaceuticals and clinical diagnostics. These companies have raised a total of £41.2m equity investment from 51 fundraising rounds.

University of Nottingham

Managed through its subsidiary Nottingham Technology Venture Ltd, the University of Nottingham has spun out 36 companies. A large number of these companies (55.6%) have secured equity investment since, raising a combined total of £54.9m across 64 fundraising rounds.

University of Leeds

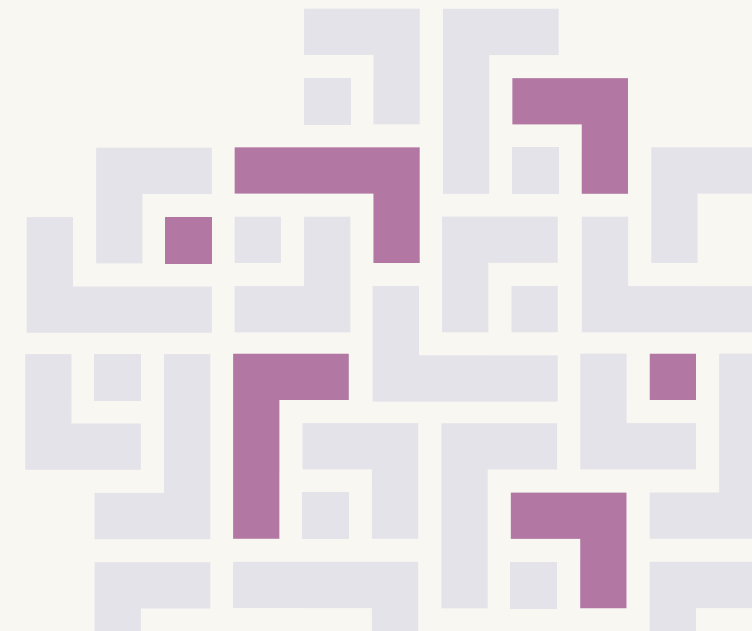
Since 2011, the University of Leeds has spun out 26 companies, three of which have subsequently exited. Two of these, Instrumental and Science Warehouse were acquired, whilst Xeros, a water-efficient laundry system, was floated in 2014. Spinouts from the university have raised a combined total of £71.5m of equity investment.

Newcastle University

The Research, Strategy and Development team at Newcastle University have supported 34 companies to commercialise research. These spinouts have raised a total £29.7m of equity investment across 42 fundraising rounds, the largest of which was secured by Newcells Biotech – a developer of stem cell technology.

Heriot-Watt University

Based in Edinburgh, Heriot-Watt University has hosted 24 spinout events, with half of these companies subsequently raising equity investment. These spinouts have raised £41.6m of equity investment during 50 fundraising rounds, and range across sectors including energy production, food and drink processing, and nanotechnology.

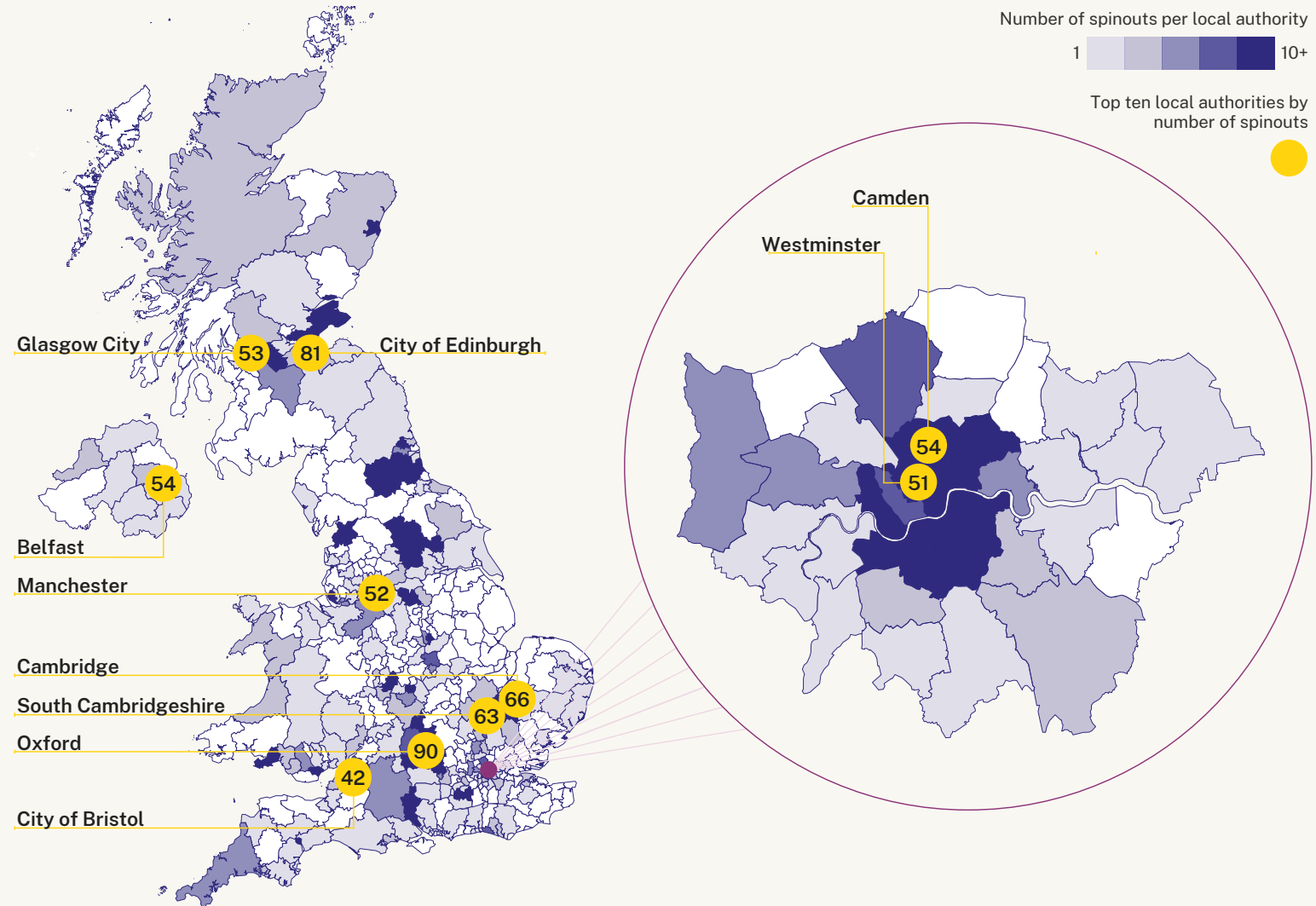


Top spinout clusters

The local authority hosting the most academic spinouts, Oxford (90) is home to the university with the highest count of spinouts, the University of Oxford. Similarly, the two Cambridgeshire local authorities — Cambridge and South Cambridgeshire — are headquarters for a combined 129 academic spinouts. This is caused by a large number of businesses choosing to headquarter their operations at a site close to their origin institution at the start of their journey. As these companies grow, however, many tend to migrate. Those that do relocate often move to London.

Another local authority where a large number of these businesses are headquartered is Edinburgh (81). Despite the namesake University only spinning out 58 businesses, the city has become a popular destination for companies to locate themselves once they have spun out from other institutions. For example, Beer 52 and Altrika are spinouts located in Edinburgh, despite having begun their journey at the University of Dundee and the University of Southampton, respectively. Other local authorities hosting a large number of spinouts include Belfast (54), Camden (54) and Glasgow City (53).

Map of top local authorities by number of spinouts (January 2022)



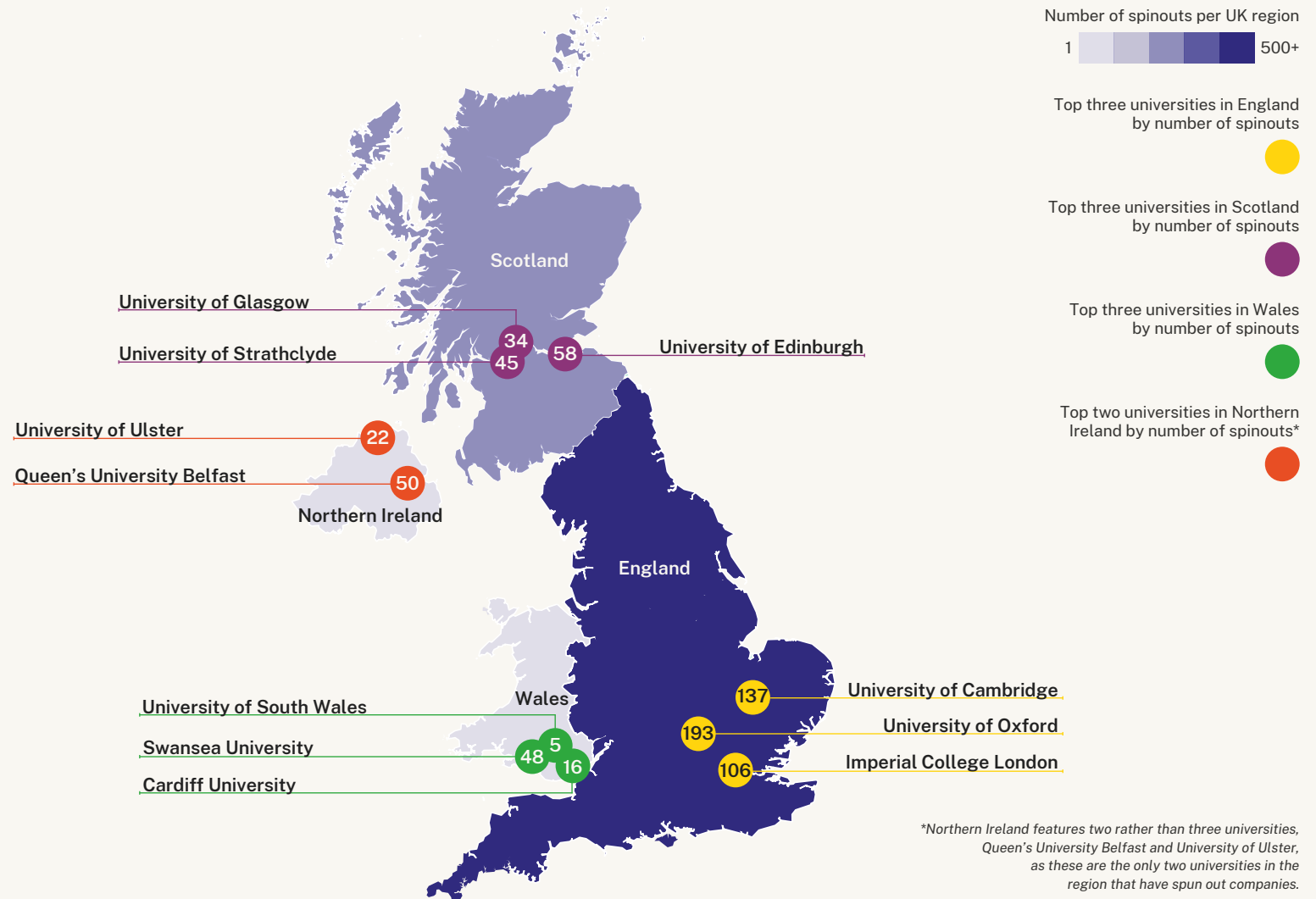
Spinning out across the UK

Although England hosts the top six universities with the most spinout activity, institutions located in Wales, Northern Ireland and Scotland have been highly successful at commercialising research. The University of Edinburgh, for example, has spun out 58 companies. Other Scottish universities with a large number of spinouts are the Universities of Strathclyde (45) and Glasgow (34). All three of these Universities feature in the ranking for top 20 origin universities.

Several universities based in Wales have also spun out a number of businesses. Swansea University, ranked 10th in this year's report, having supported the creation of 48 companies. The other top universities are Cardiff University (16) and the University of South Wales (5).

Based in Northern Ireland, Queen's University Belfast has been highly productive. Ranking as the ninth most product University, having spun out 50 businesses. The other University in Northern Ireland that has commercialised its research is the University of Ulster (22).

Map of top universities by number of spinouts (January 2022)



Dominant spinout sectors

The leading sectors for academic spinouts, pharmaceuticals (282) and research tools/reagents (257), both sit within the broader life sciences industry. Their popularity is caused by the nature of the life sciences industry, in being built on intensive research and testing processes, aligning itself easily with the

spinout model. Other sectors with a large number of spinout companies are: analytics, insights and tools (205), clinical diagnostics (140) and software-as-a-service (122). The top emerging sector for spinout companies is artificial intelligence (138). The industry is highly concentrated, hosting more than

double the number of spinout companies than the second most popular emerging sector – precision medicine (67). Other popular emerging sectors include eHealth (52), big data (43) and digital security (39).

Top sectors by number of spinouts (January 2022)

Pharmaceuticals	282
Research tools/reagents	257
Analytics, insight, tools	205
Clinical diagnostics	140
Software-as-a-service (SaaS)	122
Medical devices	118
Materials technology	106
Nanotechnology	65
Mobile apps	61
Security services	57
Medical instrumentation	57
Educational services	49
Healthcare products	44
Desktop software	41
Chemicals	40
Internet platform	38
Clean energy generation	38
Semiconductors	34
Chips and processors	31
Machinery	30

Top emerging sectors by number of spinouts (January 2022)

Artificial Intelligence	138
Precision medicine	67
eHealth	52
Big data	43
Digital security	39
Wearables	34
Internet of Things	32
Regenerative medicine	30
EdTech	27
3D printing	26
Graphene	23
Virtual reality	22
Quantum	18
Augmented reality	17
Robotics	15
Biomass and biofuels	12
Preventive care	12
Drones	11
Gamification	11
Open source	11

2

Funding sources

- Rising investment into spinouts
- Top investees in 2021
- Average investment size
- Top investors
- Spotlight on early investors
- Innovate UK grants
- Spinouts in the pandemic



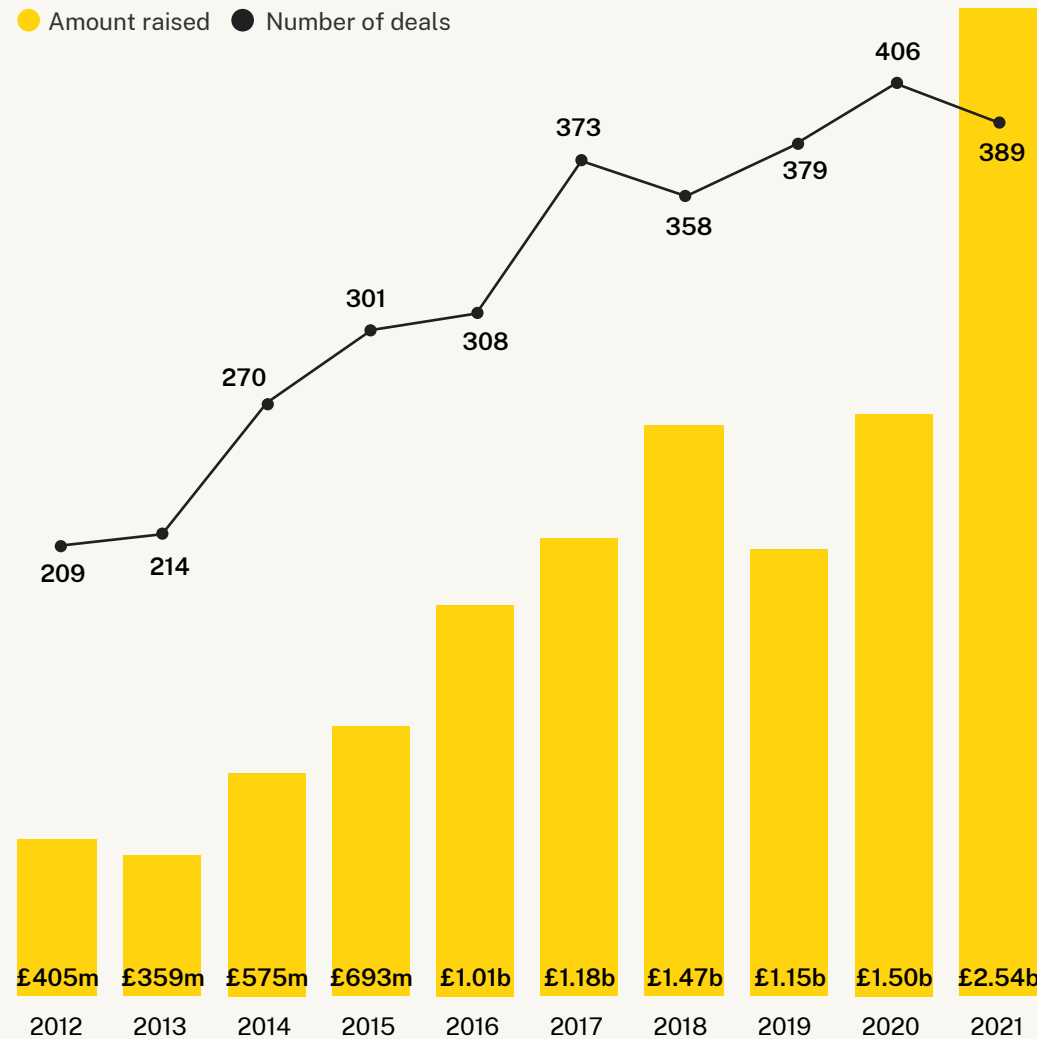
Rising investment into spinouts

The number, and value, of equity investments secured by academic spinouts has increased significantly over the last decade, rising from 209 deals with a combined total value of £405m in 2012 to 389 deals worth £2.54b in 2021. This represents a compound annual growth rate of 20.2%.

Despite an overall trend of growth during this ten-year period, there was a drop in the value of equity investment secured by spinouts during 2019 and 2020. These changes were most likely caused by macroeconomic factors, such as Brexit and the COVID-19 pandemic, that gave rise to investor hesitancy. The figures for 2021 reflect both a return to expected investment figures, supplemented by a number of deals that stalled during the turbulent economic cycles.

Between 2020 and 2021, the value of investment secured by spinouts increased by 69.3% – from £1.5b to £2.54b. This exponential growth mirrored the broader equity market during this timeframe with equity investment into all companies rose from £15.4b to £26.5b.

Investment into spinouts (2012-2021)



£10.9b

of investment secured by academic spinouts (2012-2021)

20.2%

compound annual growth rate for investment in spinouts (2012-2021)

Top investees in 2021

The following academic spinouts secured the most funding in 2021, raising a combined £2.54b of equity investment. The majority of these businesses sit within the life sciences industry, a sector that requires a large volume of funding to support the research and development undertaken. The only company

outside of the industry is Graphcore, which develops a processor designed to optimise artificial intelligence and machine learning tasks. The University of Bristol spinout has secured £528m of equity investment across seven fundraising rounds, with the most recent of these valuing the company at £1.52b.

Three of the top investees for 2021 underwent an exit in the same year: Exscientia, Oxford Nanopore Technologies, and Vaccitech. These businesses raised £300m, £856m, and £162m respectively prior to exiting via IPO.

Exscientia

Total equity raised £300m
 Incorporation date 20/07/2012
 Sector Pharmaceuticals

By drawing on artificial intelligence, Exscientia designs and tests a large number of small molecules to predict which of these will make successful drugs.

Oxford Nanopore Technologies

Total equity raised £856m
 Incorporation date 09/03/2005
 Sector Research tools

Oxford Nanopore Technologies develops a range of portable DNA and RNA sequencing devices, with their most notable product used for COVID-19 testing.

Graphcore

Total equity raised £528m
 Incorporation date 17/05/2015
 Sector Server software

Graphcore has developed a processor optimised for machine-learning tasks, using technology to accelerate machine learning applications both in servers and in the cloud.

Quell Therapeutics

Total equity raised £178m
 Incorporation date 19/03/2019
 Sector Pharmaceuticals

By harnessing the suppressive capacity of Treg cells, Quell Therapeutics develops therapies for a range of autoimmune and inflammatory, as well as preventing organ transplant rejection.

Gyroscope Therapeutics

Total equity raised £194m
 Incorporation date 18/04/2016
 Sector Pharmaceuticals

The gene therapies developed by Gyroscope Therapeutics aim to tackle age-related macular degeneration by using innovative methods of preserving eyesight.

Vaccitech

Total equity raised £162m
 Incorporation date 27/01/2016
 Sector Pharmaceuticals

Vaccine is a T cell immunotherapy and vaccine company developing products that can treat and prevent infectious diseases and cancer.

bit.bio

Total equity raised £141m
 Incorporation date 07/11/2016
 Sector Research tools

The technology developed by bit.bio combines synthetic and stem cell biology to create human cells for research and drug discovery.

PepGen

Total equity raised £119m
 Incorporation date 25/01/2018
 Sector Pharmaceuticals

PepGen creates a pipeline of disease-modifying therapeutics by using their Enhanced Delivery Oligonucleotide technology for those living with neuromuscular disease.

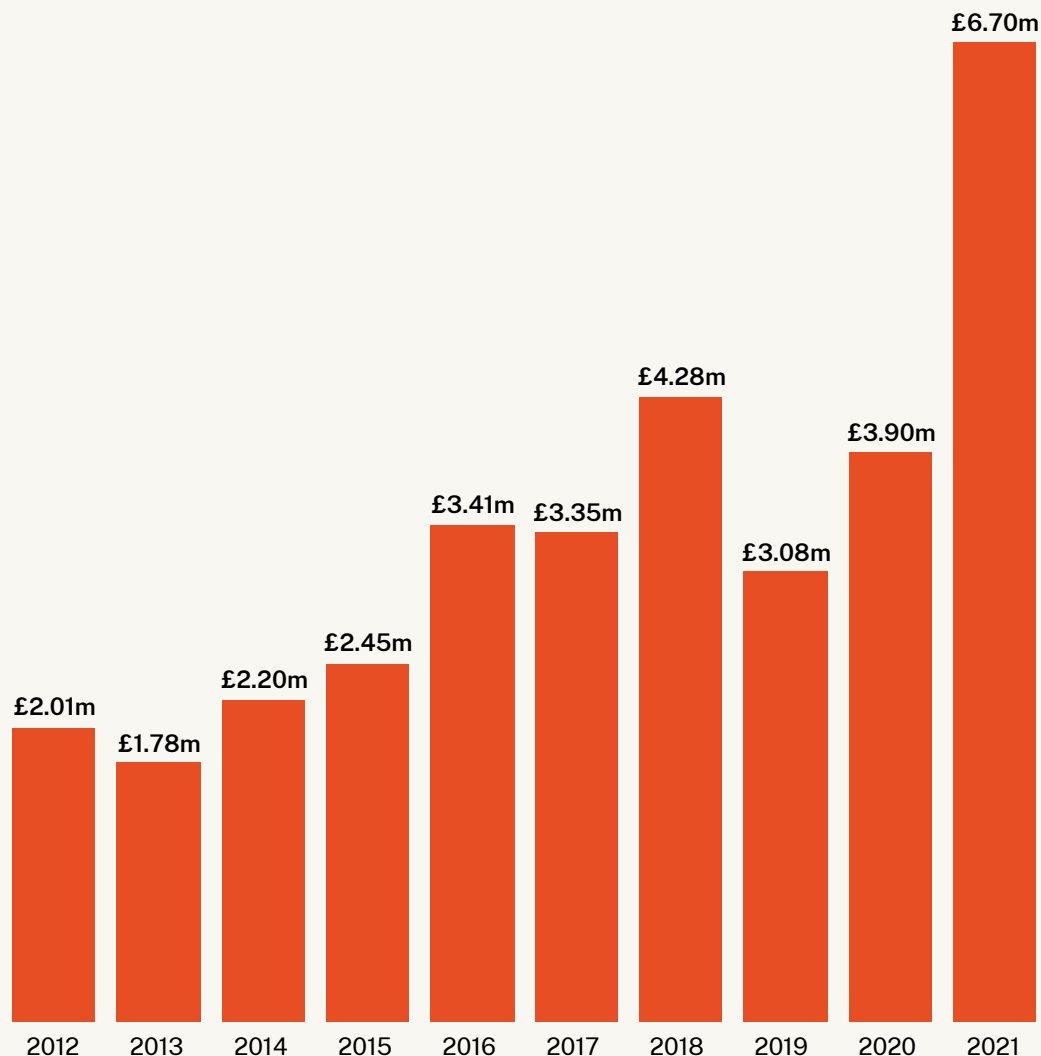
Average investment size

The value of the average investment has increased by 233% between 2012 and 2021, with these figures broadly mimicking the fluctuations observed in the total value of equity investment observed on page 10. In 2021, the average equity deal reached a ten-year high at £6.70m, marking a 71.8% increase from the previous year and a 233% increase from 2012.

These figures can be skewed by individual large deals. In those years showcasing the largest average investment size, a wide discrepancy between the mean and median values can often be observed. For example, in 2018, the average investment was £4.28m, compared to a median of £800k. A number of high-value deals contributed to this, including those benefiting Graphcore (£158m) and Oxford Therapeutics (£118m). In 2021, similarly, the mean investment size was £6.7m with a median of £890k. Deals that took place that year included Oxford Nanopore Technologies (£195m), Graphcore (£162m) and Exscientia (£162m).

Those years with the lowest average investment size show a more consistent deal size, with a less severe discrepancy between the average and the median investment. For example, in 2013, the average investment size was £1.78m, while the median investment was £600k.

Average investment size (2012-2021)



£3.31m

average investment round size (2012-2021)

233%

increase in average investment into spinouts (2012-2021)

Top investors

The ranking of top investors since 2012 has changed since last year's edition of this report, with 389 new investments into 2021. Participating in the largest number of equity deals for spinout companies between 2011 and 2021 was Scottish Enterprise. All of the fund's operations are sponsored by

the Scottish Government, with the aim of supporting businesses in the region. They are followed in the ranking by IP Group (118), Parkwalk Opportunities EIS Fund (110), and Oxford Science Enterprises (92). The investor featuring in the largest total value of equity deals between 2011 and 2021 was IP Group –

which participated in fundraising rounds worth £1.03b. Other investors at the top of the ranking include Syncona Partners (£942m), Oxford Science Enterprises (£891m) and Woodford Investment Management (£727m).

Top investors by number of equity deals into spinouts (2011-2021)

Scottish Enterprise	232
IP Group*	118
Parkwalk Opportunities EIS Fund*	110
Oxford Science Enterprises	92
Mercia Fund Managers	87
University of Cambridge Enterprise Fund	87
University of Cambridge Seed Funds	86
Touchstone Innovations*	79
Technology Venture Investments	65
Archangels	62
SyndicateRoom	55
University of Oxford Innovation Fund (UOIF)	39
Parkwalk UK Tech Fund*	39
Cambridge Angels	39
Future Fund	35

*Parkwalk and Touchstone are now subsidiaries of IP Group.

Top investors by total value of equity deals into spinouts (2011-2021)

IP Group	£1.03b
Syncona Partners	£942m
Oxford Science Enterprises	£891m
Woodford Investment Management*	£727m
Touchstone Innovations	£824m
Molten Ventures	£568m
Amadeus Capital Partners	£569m
Invesco	£520m
Temasek	£478m
Baillie Gifford	£478m
Parkwalk Opportunities EIS Fund	£467m
Novo Holdings	£432m
M&G Investments	£432m
Cambridge Innovation Capital	£387m
RA Capital Management	£385m

*Woodford Investment Management is now defunct.

Spotlight on early investors

The following investors participated in the largest total value of seed-stage funding for academic spinouts. Most of them are focused on a narrow group of companies. For example, CureDuchenne Ventures, which backs companies working to locate a cure for Duchenne, and the UCL Technology

Fund, an investor supporting only University College London spinouts working in physical and life sciences. Similarly, Oxford Science Enterprises is linked to the University of Oxford, having received an equity stake in all science spinout companies since 2015. Syncona Partners is a fund focused on

life sciences companies, and has backed spinout companies from across the nation — maintaining no specific university link.

Oxford Science Enterprises

Total equity invested 2011-2021	£891m
Seed stage equity invested 2011-2021	£343m
Incorporation date	05/2015

Since 2015, the company has received an automatic stake in all Oxford University science spinouts. Investors at the business focus on breakthrough scientific ideas, and aim to support these discoveries from an early stage.

Syncona Partners

Total equity invested 2011-2021	£942m
Seed stage equity invested 2011-2021	£251m
Incorporation date	10/2012

The Camden-based fund targets life sciences companies, focusing on those working in gene therapy, targeted cell therapy and advanced diagnostics. The fund has invested in a number of seed-stage spin outs including Puresping and Resolution Therapeutics.

UCL Technology Fund

Total equity invested 2011-2021	£299m
Seed stage equity invested 2011-2021	£118m
Incorporation date	01/2016

The UCL Technology Fund invests in intellectual property commercialisation opportunities at the namesake university, focusing in particular on physical and life sciences. The fund is supported by Albion VC, and has £50m available to invest.

CureDuchenne Ventures

Total equity invested 2011-2021	£115m
Seed stage equity invested 2011-2021	£115m
Incorporation date	01/2014

Since 2014, the American impact fund has invested globally in companies and projects aimed at finding treatments for Duchenne. The fund participated in two seed-stage fundraising rounds for PepGen, a company working in this field, worth a combined value of £115m.

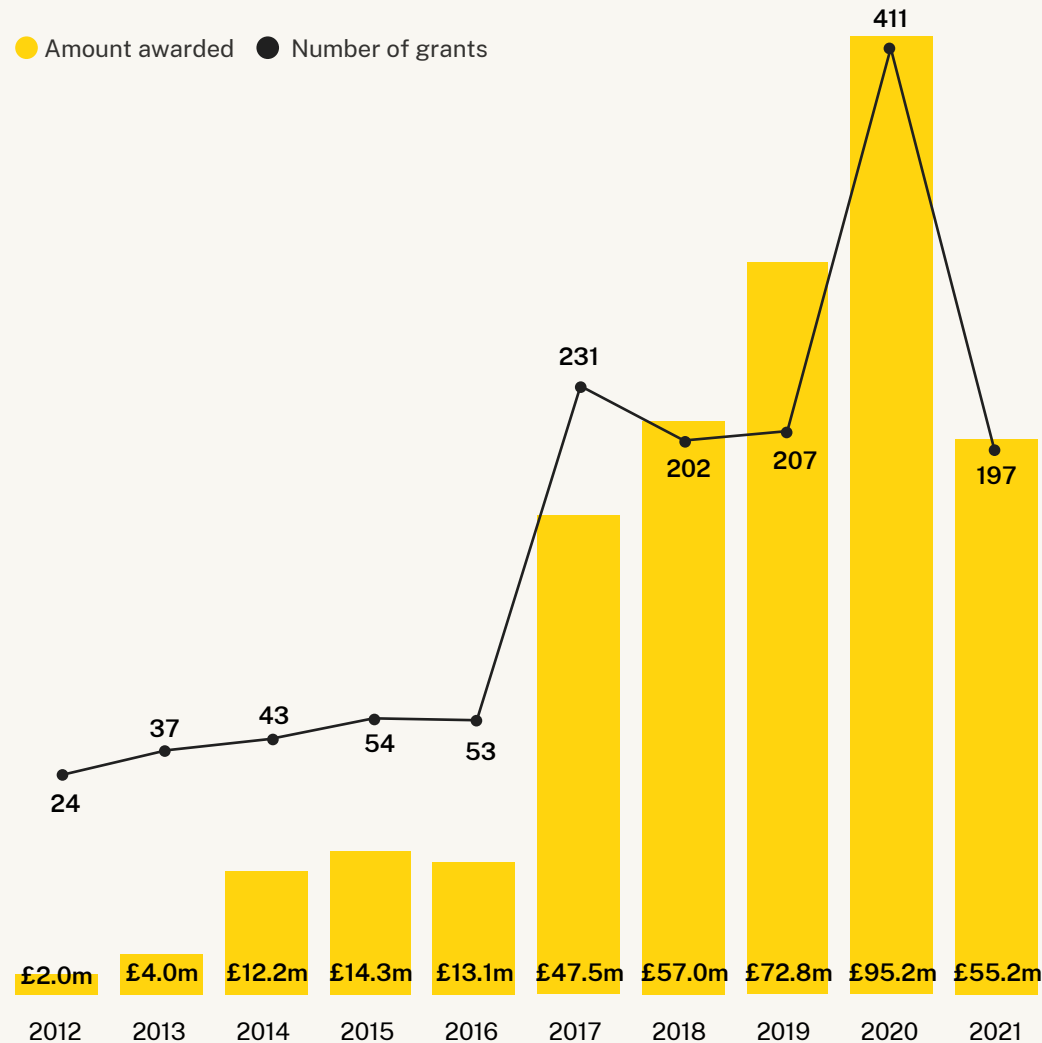
Innovate UK grants

The total number, and value, of Innovate UK grants received by academic spinouts has grown significantly between 2012 and 2020. During this time frame, the compound annual growth rate for the value of grants secured by these businesses was 53.6%, as the number of deals raised from 24 to 411. Between 2016 and 2017, there was a notable increase in both of these figures, with both the number and value of deals rising threefold.

In contrast with the investment trends for equity secured by academic spinouts, Innovate UK grants for these companies did not experience the same fluctuations during 2019 and 2020 in response to the COVID-19 pandemic. This two-year period saw both the number and value of grants continue to increase, most likely due to a need to support companies tackling the pandemic.

In 2021, both of these figures dropped, with the value of awards for academic spinouts decreasing by 42.0% from the previous year. This was caused by wider government policy changes that resulted in the percentage of public expenditure allocated to Innovate UK decreasing from 1% to 0.5%.

Innovate UK grants received by spinouts (2012-2021)



1,260

total number of Innovate UK grants awarded to spinouts (2012-2021)

39.3%

compound annual growth rate for Innovate UK grants awarded to spinouts (2012-2021)

Spinouts in the pandemic

In parallel to the broader high-growth ecosystem, academic spinouts could not avoid the turbulence caused by the COVID-19 pandemic. In light of this, 41 spinout companies used the furlough scheme between December 2020 and September 2021.

This represents a mere 2.52% of spinouts – indicating that many did not require government support to continue their operations. With 270 companies currently hiring, this is evidence that the spinouts community is continuing to grow, despite the uncertainties caused by the pandemic.

Several spinouts were able to contribute towards the pandemic, with 258 businesses receiving Innovate UK grants for COVID-19 related efforts. These companies discussed below contributed towards the pandemic efforts by either applying, or altering, their technology.

Hexigone Inhibitors

Incorporation date 10/06/2016
Sector Material technology

Spun out from Swansea University, the company usually manufactures chrome-free corrosion inhibitors but switched to manufacturing hand sanitisers for frontline workers during the pandemic.

Sonobex

Incorporation date 20/02/2012
Sector Material technology

Sonobex spun out from Loughborough University, having developed innovative noise control technologies. During the pandemic, the company redeployed its 3D printing equipment to manufacture face visor equipment for NHS workers.

Nitropep

Incorporation date 25/02/2017
Sector Chemicals

University of Birmingham spinout Nitropep has developed an antiviral air filter that promises to kill 99.99% of viruses, including COVID-19, in under a minute. The company has also created 'self-cleaning' antibacterial coating technology that rapidly inactivates the disease.

270

spinout companies actively hiring (January 2022)

258

spinouts companies receiving COVID-19 related Innovate UK grants (January 2022)

41

spinouts using the furlough scheme between December 2020 and September 2021



3

Survival, growth and exits

- Spinout survival rates
- Stages of evolution of live spinouts
- Fastest-growing spinouts
- Exit volumes
- Top exits

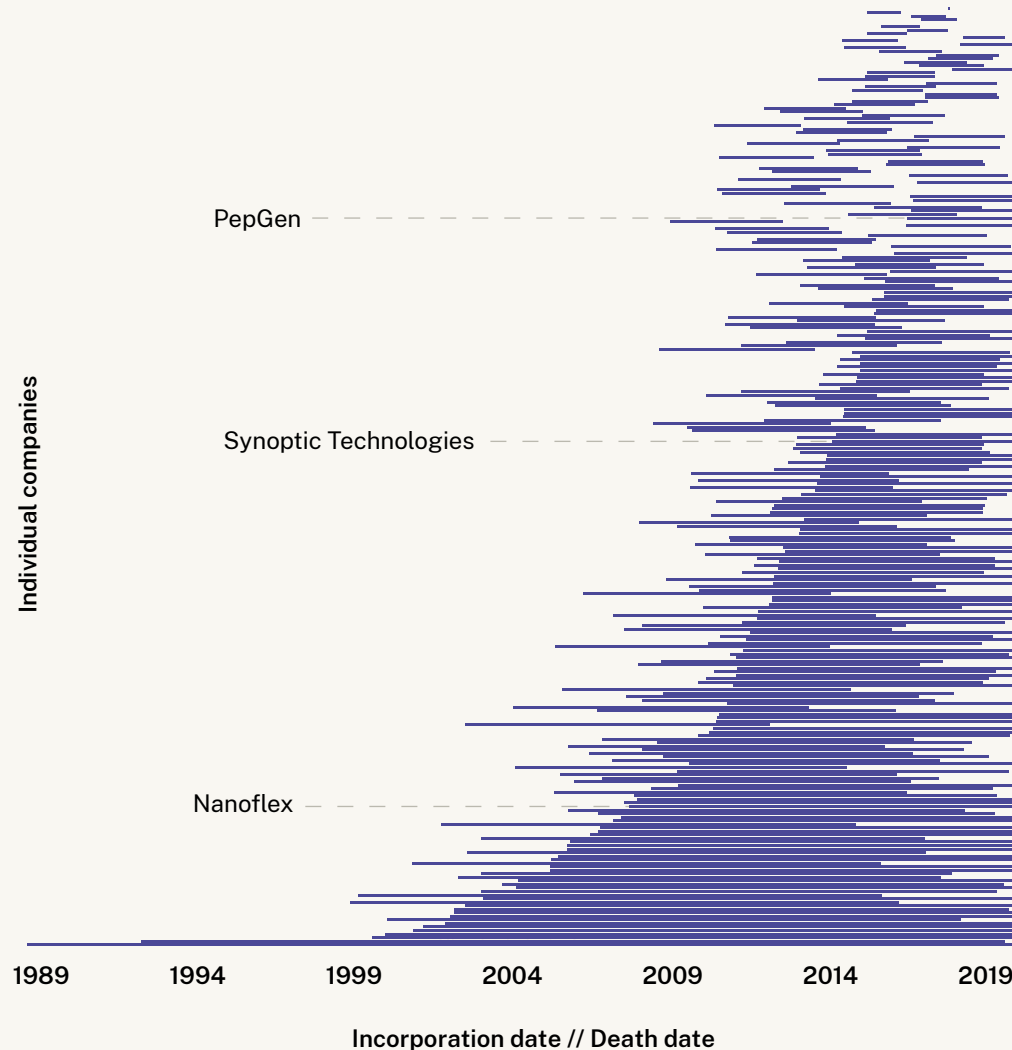


Spinout survival rates

Of the 1,630 academic spinouts tracked by Beauhurst, 13.3% have died. But academic spinouts are more likely to survive than the average startup. Whilst only half of all startups will live longer than five years, the average age of death for an academic spinout is almost nine years. The cause of death for the 265 academic spinouts varies. The death of a company can be hard to predict, with the narrative of Synoptic Technologies exemplifying this. The business launched in 2015 as a University of Surrey spinout, quickly acquired their competitor Technotomy and secured £520k of equity investment. Despite this, the artificial intelligence marketing and sales platform died in 2019 — only four years later.

Whilst some spinouts die soon after their inception, most survive for several years — thus causing the average lifespan to be greater than that for all companies. Nanoflex, for example, ceased their operations in 2019 at the age of 11. The company manufactured non-electrodes for commercial purposes, to be used in technologies such as diabetic testing sensors and energy storage.

Lifespan of spinouts that have died since January 2012



8.80 years

average age of UK spinouts at death (2012-2021)

265

number of dead spinouts (January 2022)

Stages of evolution of live spinouts

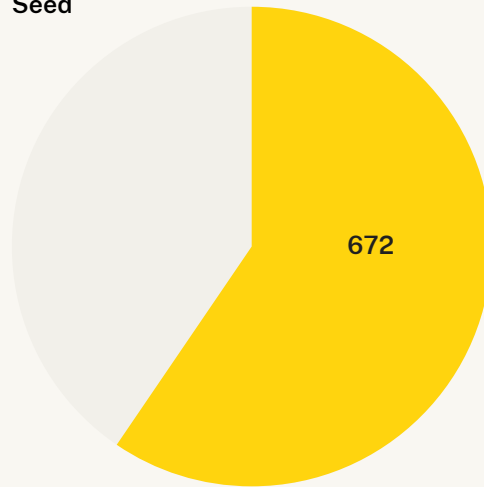
Companies are assigned the stages of evolution outlined in the charts opposite by Beauhurst analysts, who use over 40 proprietary criteria to determine how a business should be categorised. As of January 2022, there are 1,130 active UK spinouts with the majority of these (59.5%) still at seed-stage.

In comparison with the wider population of high-growth companies, where 35.3% of businesses are at seed-stage, there is a larger proportion of young spinout companies. One of these businesses is Amprologix, a spinout from the University of Plymouth developing next generation antibiotics to combat the rise of antibiotic resistance. Since its inception in 2018, the company has been awarded £1.18m of grant funding by Innovate UK to support pre-clinical trials.

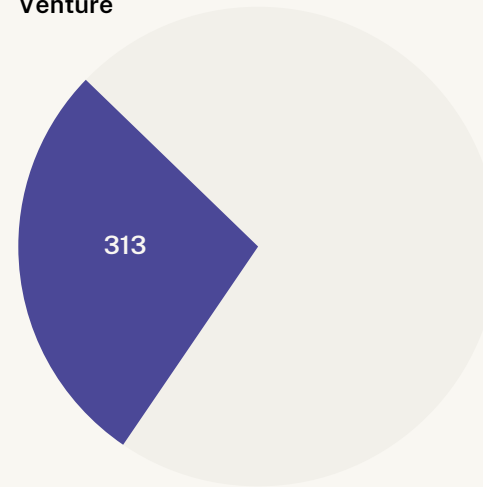
Despite the saturation of seed and venture stage companies in the academic spinouts cohort, there are a number of businesses (62) that have matured into the established stage. P2i is one example of this. The developer of liquid-repellent nano-coating technology spun out from the Defence Science and Technology Institute in 2004, and has since secured £85.2m of equity funding.

Stage of evolution of active spinouts (January 2022)

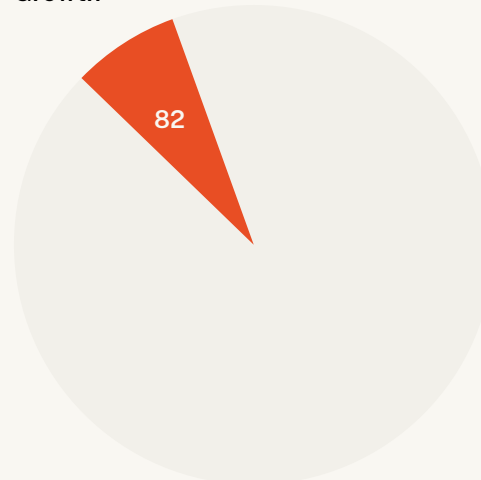
Seed



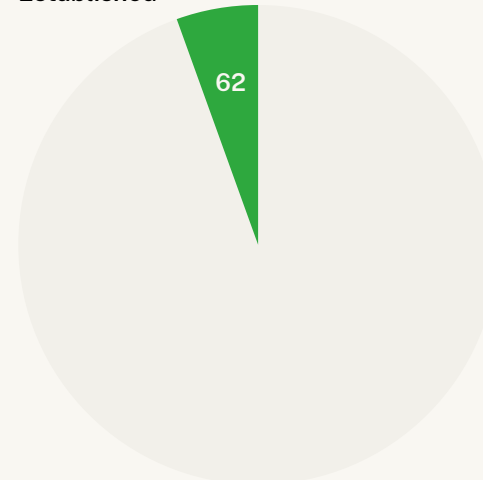
Venture



Growth



Established



1,130

active UK spinouts
(January 2022)

59.5%

of active UK spinouts in seed
stage (January 2022)

Fastest-growing spinouts

The following academic spinouts evidenced the largest compound annual growth rate (CAGR), for either their turnover or headcount, in their financial accounts for the past three years. Diurnal and Oncimmune are the two companies with the highest CAGR for turnover, having increased their revenue

by 321% and 149% respectively. In terms of headcount growth, the two businesses with the highest CAGR were VitriTech Glass and Echion Technologies, which increased their employee count by 122% and 104% respectively. These academic spinouts have showcased the capacity for rapid growth,

with each company scaling their operations significantly over the past three years.

Diurnal

CAGR (Turnover)	321%
Turnover (FYE 2021)	£5.44m
Headcount (FYE 2021)	29
Sector	Pharmaceuticals

Spunout from the University of Sheffield, Diurnal develops a drug for individuals with reduced levels of the hormone cortisol. Since launching in 2004, the company has raised £9.15m of equity investment, and benefitted from £1.62m of grant funding. In 2015 the business underwent an IPO with a market capitalisation of £75.2m.

Oncimmune

CAGR (Turnover)	149%
Turnover (FYE 2021)	£3.72m
Headcount (FYE 2021)	52
Sector	Clinical diagnostics

Oncimmune has created early cancer detection technology, which uses autoantibody assays to detect cancer via a simple blood test. The company, which spun out from the University of Nottingham has raised £3.50m of equity funding, and secured £599k of grants since 2003. The company floated in 2016 with a market capitalisation of £66.3m.

VitriTech Glass

CAGR (Headcount)	122%
Turnover (FYE 2021)	N/A
Headcount (FYE 2021)	11
Sector	Research tools and reagents

The University of Leeds spinout VitriTech Glass manufactures speciality glass to create products for the oil and gas, tunnelling, medical, and marine markets. Since launching in 2010, the business has been awarded with £277k of grant funding.

Echion Technologies

CAGR (Headcount)	104%
Turnover (FYE 2021)	N/A
Headcount (FYE 2021)	17
Sector	Nanotechnology

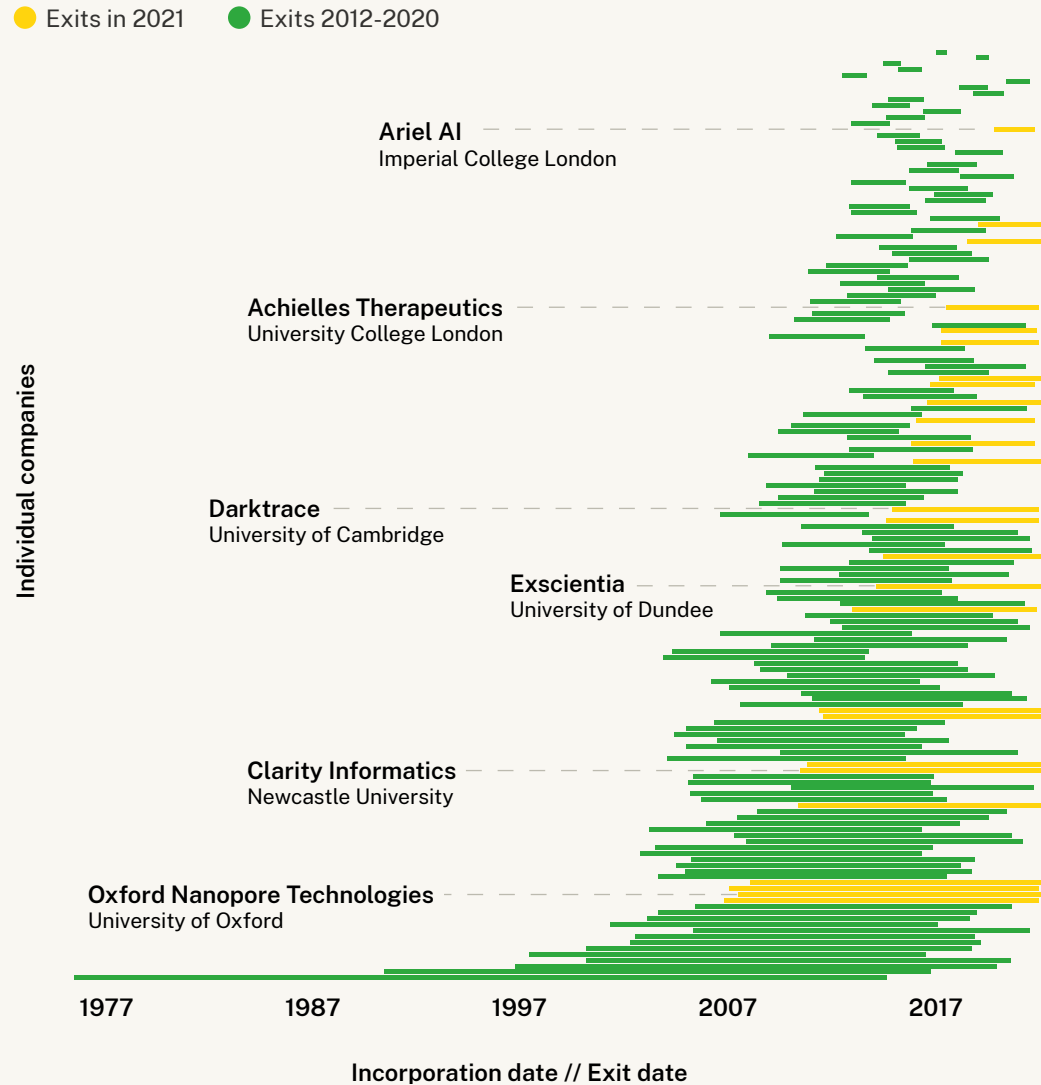
Echion Technologies, a lithium-ion battery supplier, spun out from the University of Cambridge in 2017 and since then has received £1.45m of grant funding. The business has also secured £11.9m of equity investment, with their most recent funding round valuing the businesses at £15.2m

Exit volumes

Since 2012, 164 UK spinouts have exited from the high-growth ecosystem, with 26 of these events taking place in 2021. Whilst academic spinouts are more likely to exit via acquisition than IPO, the proportion of spinouts choosing to float is higher than that of the wider high-growth ecosystem. In 2021, 93.7% of all exits undertaken by high-growth companies were in the form of acquisitions, whereas for academic spinouts this figure was lower – 81.5%.

For the cohort of businesses that exited in 2021, there was a clear range of ages and evolutionary stages at which this event took place. Oxford Nanopore Technologies, for example, spun out from the University of Oxford in 2005 and secured £856m of equity funding prior to floating on the London Stock Exchange in September 2021. Ariel AI, on the other hand, spun out from Imperial College London in February 2020 before being acquired by Snac Inc less than a year later in January 2021.

Exit volumes by date incorporated (2012-2021)



164
exits completed by UK spinouts (2012-2021)

26
exits completed by UK spinouts in 2021

Top exits

The following rankings detail the highest valued exits for academic spinouts, according to the type of exit that took place. Comparing the two lists, it is clear that the market capitalisations received by companies undertaking an IPO are distinctly larger than the transactions taking place for acquired

companies. This trend is not limited to academic spinouts. The top acquisitions are ranked based on the company's valuation at the time of the transaction if known, or otherwise the total value of the consideration paid during the transaction. These pieces of data are collected from public

announcements, annual accounts and other disclosures.

Top IPOs of spinouts by market capitalisation (2012-2021)

Oxford Nanopore Technologies	£3.38b
Exscientia	£2.38b
Orchard Therapeutics	£950m
Adaptimmune	£772m
Intelligent Energy	£639m
Circassia	£581m
Achilles Therapeutics	£529m
Autolus	£498m
Freeline Therapeutics	£476m
NuCana	£346m
MeiraGTx	£304m
Kairos	£164m
Oxford BioDynamics	£136m
Xeros	£80.0m
Abzena	£77.9m
Diurnal	£75.2m
Oncimmune	£66.3m
Mirriad	£63.2m
Redx Pharma	£55.2m
Itaconix	£53.0m

● Exits in 2021 ● Exits 2012-2020

Top acquisitions of spinouts by company value or consideration paid (2012-2021)

Zylo	£623m
NaturalMotion	£320m
Inivata	£280m
Heptares	£259m
Oxitec	£103m
Quethera	£85.0m
Atopix	£63.7m
Process Systems Enterprise	£58.0m
Cobalt Light Systems	£40.0m
VocalIQ	£38.7m
Permasense	£30.6m
Cambridge CMOS Sensors	£30.5m
Haemostatix	£28.0m
Bloomsbury AI	£22.8m
Cizzle Biotech	£21.0m
Simcyp	£20.4m
Puridify	£14.8m
Sirakoss	£8.40m
EMcision	£7.22m
DeepReason.ai	£5.45m

4

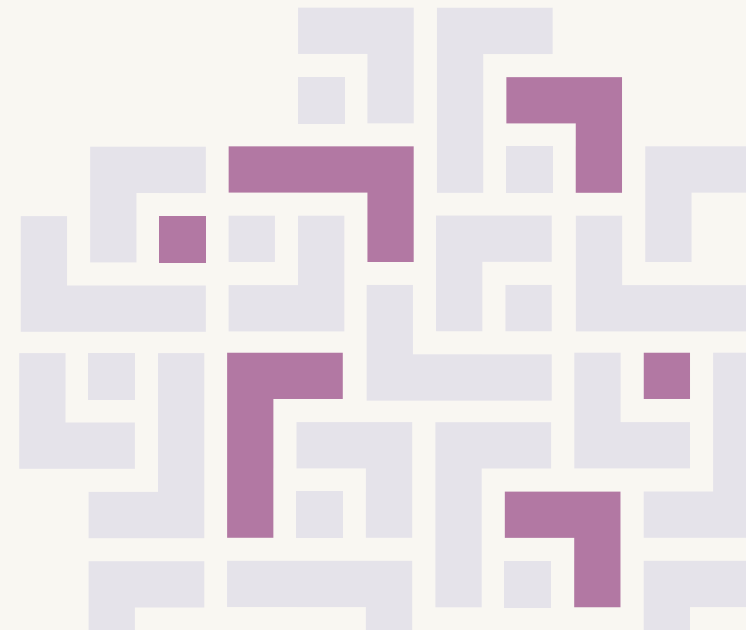
Leadership

- Leadership demographics: gender
- Leadership demographics: age
- Director nationalities



Leadership demographics: gender

New analysis has shown that gender data previously published on this page of this report was incorrect and therefore it has been retracted. Please refer to the 2023 edition of the Spotlight on Spinouts report for an updated analysis on the gender of founders and directors of spinout companies.



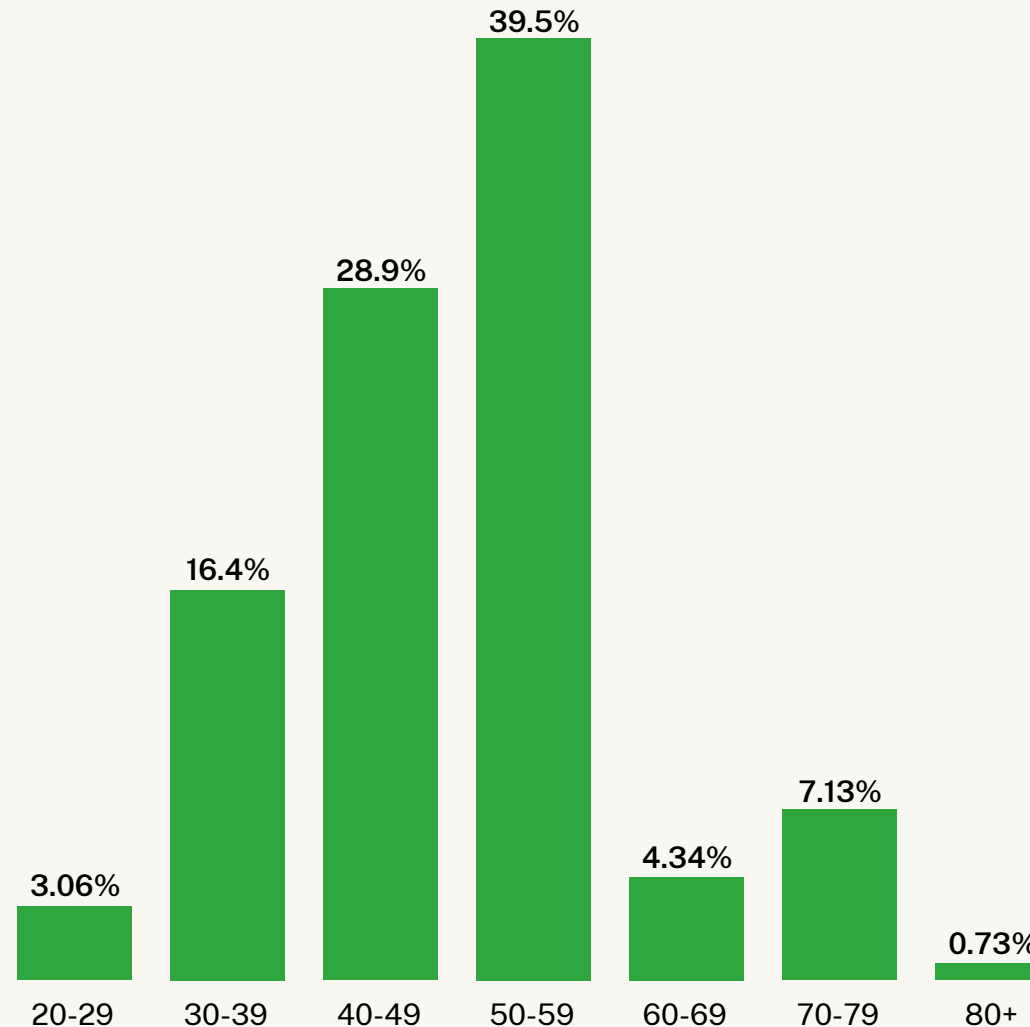
Leadership demographics: age

The age breakdown for directors of academic spinouts are broadly similar to those of all high-growth companies tracked by Beauhurst. It should be noted that this analysis does not include graduate startups, a factor which impacts the age demographics for spinouts. The most popular age bracket for spinout directors, and all high-growth directors, is between 50 and 59. Despite this, there are more directors within this age range for directors of spinouts (39.5%) than for all high-growth companies (30.0%).

There are fewer spinout directors over the age of 60, than with the broader high-growth ecosystem. Whereas 23.0% of all directors are within this age bracket, for spinouts this figure is halved, with only 12.2% of directors being over the age of 60. There is also a larger number of spinout directors between the ages of 20 and 29, with 3.06% of directors falling into this category, compared to the 2.00% of all company directors in this range.

A previously published version of this page incorrectly labelled this analysis as referring to the ages of founders. It refers to the ages of directors, and has been updated to reflect this.

Age breakdown of directors of spinouts (January 2022)



39.5%

of UK spinout directors are within the 50-59 age bracket (January 2022)

3.06%

of UK spinout directors are within the 20-29 age bracket (January 2022)

Director nationalities

As might be expected, it is most common for directors of spin outs in the UK to be UK nationals, with 3,419 of directors falling into this category —representing 72.9% of the total. Of the remaining director nationalities, the United States is the most popular (292), representing 23.0% of the international community. This is unsurprising given the cultural and linguistic history between the UK and the US. Moreover, the US acts as a dominant force in the pharmaceutical industry, which is the leading sector for UK spinouts; thus giving rise to an additional connection between the two. One example of this is Merck, a US pharmaceutical company that has been present in the UK's life sciences community for over 80 years.

The second most popular international nationality for UK spinouts directors is Ireland, with 102 directors falling into this category. The proximity of the Republic of Ireland and its shared language explain this. Other nationalities with a high representation in directorship positions at UK spinouts include Germany (101), China (74), and Italy (63). France ranks 6th in this list, with 52 directors holding a French nationality. This is lower than might be expected, however, is most likely caused by a number of spin outs emerging from French Universities inspiring nationals to focus more locally.

Top nationalities by number of directors of spinouts—excluding UK (January 2022)

United States	292
Ireland	102
Germany	101
China	74
Italy	63
France	52
Australia	44
Netherlands	39
Spain	37
Canada	35
Greece	32
India	31
Japan	22
Belgium	22
Switzerland	17
Austria	14
Sweden	13
South Korea	13
Denmark	13
Malaysia	12

3,419

directors of UK spinouts with UK nationality (January 2022)

1,271

directors of UK spinouts with foreign nationality (January 2022)

5

Equity stakes and IP policy

- Equity stakes methodology
- University and founder stakes
- University equity stakes
- Average university stakes
- IP policy reviews
- IP policy sourcebook



Equity stakes methodology

The dataset analysed for the equity stakes section of the report comprised 1,534 spinout companies tracked by Beauhurst since 2011 (N.B. the rest of the report covers 1,628 spinouts tracked since 2011 – the additional 94 companies spun out, or were identified as spinouts, after the equity stakes analysis was begun). Of these 1,534 companies, 377 were removed as the company was incorporated prior to 01/01/2010, and 520 were removed because no university entity held an equity stake. A further 54 businesses were omitted because the university held a stake >50%, leaving 583 analysable spinout companies. Some key methodological considerations are outlined under the headings below.

Institutional holdings versus captive funds

When an academic institution and its technology transfer office own shares in a company, their shareholdings have been counted in aggregate as being the academic institution's equity stake. The stakes held by captive funds, such as Cambridge Innovation Capital (CIC), have been excluded because those stakes are received in exchange for external investment.

Reliance on confirmation statements

UK companies are required to file a confirmation statement once a year with Companies House. The confirmation statement provides a snapshot of a company's shareholders at the time of filing but does not necessarily account for changes to shareholdings that occur between filings. For example, a company could spinout, split equity between founders and the academic institution, and raise dilutive external investment in the space of a year. While in practice this seems to be relatively rare, such a case would make the founder and institutional stakes smaller in the first confirmation statement than the stakes had actually been at the point when the company spun out.

Spinouts without university shareholders

An academic institution does not necessarily have to have an equity stake in a company for the company to be considered a spinout (please see page 45 for a definition of a spinout). An academic institution may choose to licence intellectual property to a company without taking equity. Out of the cohort of spinouts tracked since the beginning of 2011, there are 520 that do not appear to have had an academic institution as a shareholder, and have been excluded from the analysis.

Exclusion of majority institutionally owned companies

In the case of 54 (3.50%) companies out of the 1,534 businesses analysed in our sample of spinouts, the academic institution holds more than 50% of the equity. For newer spinouts, this may be due to the time lag between a company spinning out and filing a subsequent confirmation statement where the institutional stake has been reduced to below 50%. Because these companies are nominally subsidiaries of the institution, they have been excluded from this analysis. This figure is different from last year, when 3.85% of companies were excluded for this reason.

No provision for option pools

The equity stakes in this analysis do not account for option pools that may exist at the spinout. The stakes we have used represent the present truth of the company's capitalisation table, but if an options pool exists, it is likely that the technology transfer office and founders will be anticipating this dilution.

Founders equity split calculation

One change in methodology from last year's edition of this report is a shift from analysing individual founder statistics to those for all founders. As founder teams differ in size, this causes stakes to vary considerably. It was decided that looking at these stakes individually would not present the whole picture.

University and founder stakes

The figures in this year's report differ from those stated in last year's edition of *Spotlight on Spinouts*. This is caused by a change in how the analysis was created, allowing for a longer observation period. This year's report analyses 583 companies tracked since January 2011 and incorporated since January 2010.

Last year, the data was limited to the 269 businesses that launched since January 2015 with an academic institution as a shareholder. These methodology changes have caused an increase in both the mean and median stake taken by universities in the year of spinning out. Last year, these figures

stood at 22.0% and 19.4%, and this year they have increased to 23.8% and 22.1%, respectively. The similarity between the mean and median figures in this year's report is noteworthy, showing that the average is an accurate reflection of the equity split across universities.

Average institutional equity stakes for 583 companies tracked since 01/01/2011 and incorporated since 01/01/2010

23.8%

mean stake taken by universities in the year of spinning out

22.1%

median stake taken by universities in the year of spinning out

14.4%

standard deviation in mean stake taken by universities in the year of spinning out

Average founder equity stakes for 583 companies tracked since 01/01/2011 and incorporated since 01/01/2010

54.4%

mean stake of founders taken in the year of spinning out

54.2%

median stake taken by founders in the year of spinning out

22.9%

standard deviation in mean stake taken by founder in the year of spinning out

University equity stakes

The breakdown of equity stakes that follows outlines the mean, median and standard deviation for the top universities in last year's edition of this report. Although the Royal Academy of Art placed fifth on this ranking, they have been excluded from this analysis as there is a lack of data available for their

spinouts. They have been replaced with the next university in the ranking, the University of Ulster. Of the Universities featured, the institution taking the highest average equity stake for spinouts is the University of Leeds (39.1%). They are followed by the University of Glasgow (32.9%), the University of Manchester

(32.1%) and Queen's University Belfast (31.5%). The smallest average stakes were taken by the University of Cambridge (12.6%), the University of Edinburgh (13.3%) and the University of Strathclyde (14.6%).

Spinout equity stakes taken by academic institutions tracked since 01/01/2011 and incorporated since 01/01/2010

Academic Institution	Mean	Median	Standard Deviation	Analysable Spinouts	Total Spinouts
University of Oxford	24.3%	25.0%	13.7%	77	193
University of Cambridge	12.6%	10.4%	10.2%	48	137
Imperial College London	25.7%	23.6%	17.5%	40	106
University College London	15.8%	9.52%	12.8%	31	86
University of Edinburgh	13.3%	12.4%	7.81%	15	58
University of Bristol	21.5%	19.4%	16.0%	24	66
Swansea University	17.1%	17.5%	6.59%	20	48
Queen's University Belfast	31.5%	33.3%	11.7%	21	50
University of Manchester	32.1%	30.0%	12.3%	22	73
University of Warwick	26.3%	24.9%	15.1%	25	45

Academic Institution	Mean	Median	Standard Deviation	Analysable Spinouts	Total Spinouts
University of Strathclyde	14.6%	20.0%	8.04%	10	45
University of Birmingham	30.1%	34.5%	15.7%	11	39
University of Southampton	20.7%	19.3%	7.81%	6	41
University of Sheffield	21.1%	18.4%	11.9%	8	38
University of Glasgow	32.9%	31.0%	10.3%	15	34
University of Nottingham	22.5%	20.1%	18.2%	13	36
University of Leeds	39.1%	37.4%	9.02%	12	26
Newcastle University	31.1%	31.4%	11.8%	15	34
Heriot-Watt University	22.3%	24.0%	4.22%	6	24
University of Ulster	29.4%	28.0%	10.3%	9	22

Average university stakes

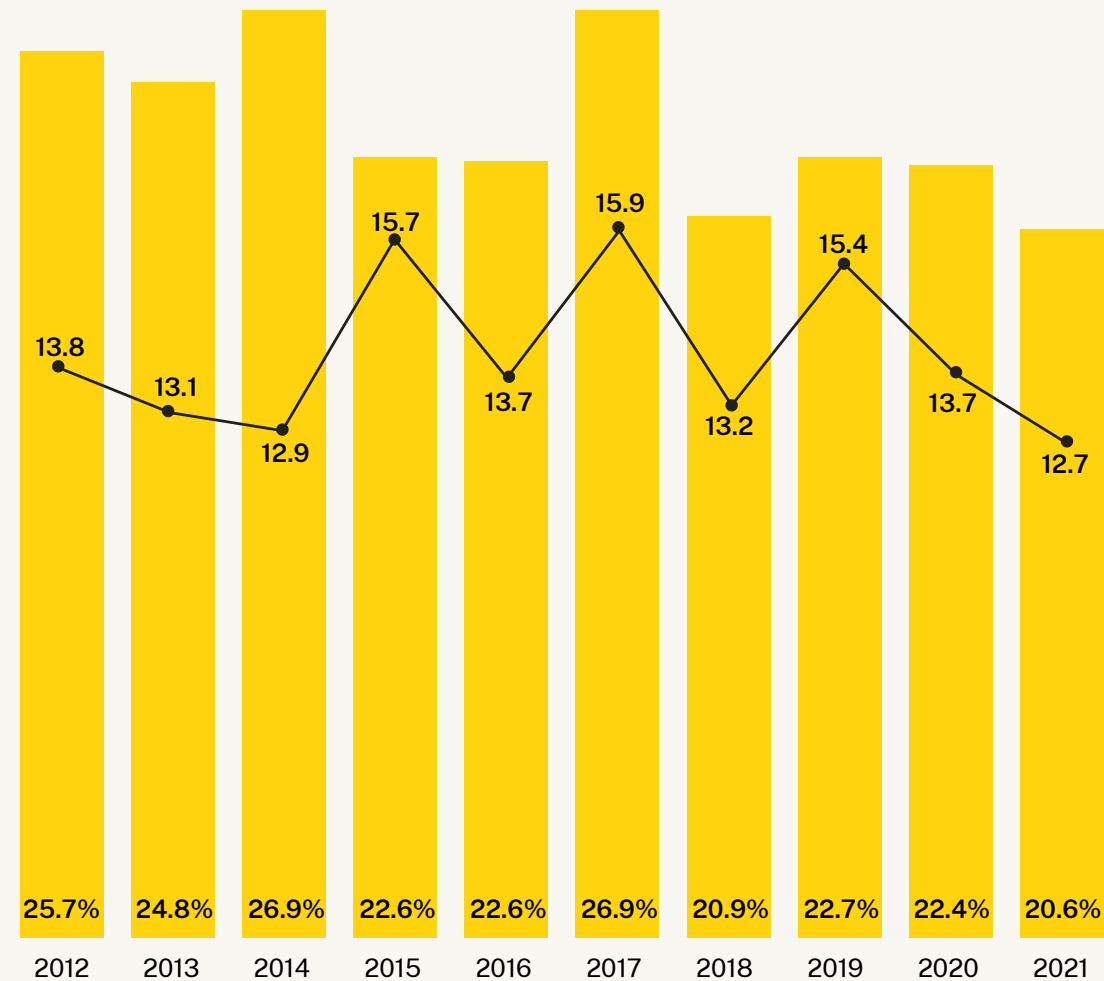
As noted on p.30, the mean stake taken by universities in the year of spinning has increased from 22% in last year's edition of this report, to 23.8%. By breaking down the institutional stake into the annual averages, the cause of this increase becomes clearly linked to changes in the methodology.

Since 2012, there has been an overall decline in the average equity stake taken by Universities in the year of companies spinning out. In 2012, this figure stood at 25.7% and by 2021 this had decreased to 20.6%. Therefore, by opening up the observation period for the total average equity stake from 2015-2020, as per last year's report, to 2012-2021, the average encompassed these larger years, and therefore pushed up the total value.

There are various reasons for this decrease. Firstly, the general trend of more academic spinout events taking place causes the average to be less sensitive to large equity stakes being taken, and thus could be a better reflection of the approach taken. Moreover, during this ten-year period there has been increasingly more criticism toward universities that have taken a large share of spinout businesses.

Average stake taken by universities in spinouts tracked since 01/01/2011 and incorporated since 01/01/2010 (2012-2021)

● Average % stake ● Standard deviation



19.8%

decrease in the average equity stake taken by universities (2012-2021)

23.8%

average stake taken by universities in spinouts (2012-2021)

IP policy reviews

This page, and those that follow, discuss the IP policies for the top 20 universities in last year's Spotlight of Spinouts report. There are a range of approaches taken by these institutions. Some, such as the University of Cambridge, determine the equity split on a case-by-case basis, taking

into account various factors related to the research and commercialisation processes. Other institutions, such as the University of Strathclyde and Newcastle University, have a more defined approach, taking a given percentage of the initial equity split. The source of these policies is referenced

throughout, with a sourcebook provided on p.36 & p.37 with links to the relevant statements. This information has been researched by Beauhurst analyst, and has been found on University websites, published IP policies and through freedom of information requisitions.

University of Oxford

The University of Oxford's technology transfer and innovation function is known as Oxford University Innovation, responsible for equity discussions with researchers of new spinout projects. From September 2021, the University has been implementing a new equity sharing policy. In most cases, the founding equity share in spinout companies will be 80% for founder researchers and 20% for the University. In a few cases, the split will be 90% for founder researchers and 10% for the University[1]. The change was made to remove case-by-case negotiation, aiming to make spinout formation easier and more transparent[2].

University of Cambridge

Cambridge Enterprise began offering seed funding in 1995 with a £2m fund [3] and has since been involved in more than 100 deals involving University of Cambridge spinouts[4]. Founding researchers and external management negotiate equity splits on a case-by-case basis with Cambridge Enterprise[5]. The nature of the technology being licensed and the number of founders are just some of the factors that feed into the final decision[6].

Imperial College London

Imperial College London commercialises technology via its Enterprise team. It formerly conducted technology transfer via Imperial Innovations which was founded in 1986 and in 2006 listed on the London Stock Exchange's Alternative Investment Market[7]. Since 2017, Imperial College London has offered university researchers two options for splitting equity in spinouts via its Founder's Choice programme. Researchers can select a founder-driven pathway to receive 90-95% of the founding equity in the company. Otherwise, researchers can choose a jointly driven pathway to receive more support and a more traditional equity split[8].

University College London

University College London's first technology transfer office was formed in 1993, becoming known as UCL Business (UCLB) in 2006[9]. Last year, University College London launched a new IP commercialisation programme called Portico Ventures. Similar to Imperial University's approach, the programme offers a founder-driven track where the university will hold 5% equity fully diluted at the point the company has received a total of £1m in equity investment[10]. Founders opting for greater support agree to a 10% fully diluted stake for the university in exchange for the IP licence and UCLB's assistance[11].

IP policy reviews(cont)

Royal College of Art

The Royal College of Art manages their portfolio of spinouts through its centre for entrepreneurship – Innovate RCA[12]. When a company is created to commercialise the intellectual property found at the institution, the share of equity awarded to the founders is negotiated on a case-by-case basis. Factors that will be taken into account when making this decision include the stage of the project and the contribution made by the inventor[13].

University of Edinburgh

The University of Edinburgh's first spinout, Reynolds Medical, was created in 1967 to commercialise a portable heart monitor[14]. Spinouts now enjoy support via Edinburgh Innovations, including the opportunity for investment from the university's venture fund, Old College Capital[15]. The university expects to take an equity stake equal to that of the founders, though factors including the IP, the role of individual researchers and any investment in the project pre-company formation will determine final equity stakes[16].

University of Bristol

The University of Bristol's commercialisation arm RED has a detailed policy on spinout formation, including likely equity stakes based on the contributions of the university and the researchers. Where no development activities have occurred and no university support is required, the university will take a 15% stake leaving the rest to the founders[17]. At the other end of the spectrum, where development activities have occurred and the further support is required, the university will take a 45% stake in the company, leaving the remaining 55% stake to the researchers[18].

Swansea University

Since the beginning of 2011, spinouts from Swansea University have raised £20.6m via 35 fundraisings[19]. The university says that it typically takes a 5-20% stake in spinout companies[20]. The Start Up and Early Stage Capital Fund, which is managed by the Development Bank of Wales, is the top investor by number of deals and by the total value of the deals it has been involved in[21].

IP policy reviews(cont)

Queen's University Belfast

Queen's University Belfast's commercialisation arm QUBIS was founded in 1984. QUBIS starts equity discussions with a hypothetical even split between founders and the university[22] before factoring in past effort and likely future effort by the spinout's founding team. The presence of know-how or patented intellectual property are also factored in. The approach is designed to achieve a structure that rewards value-creating effort.

University of Manchester

The University of Manchester (UOM) provides commercialisation services via The UOM Innovation Factory. University and founder equity stakes are dependent on a number of factors including the channel through which IP is commercialised and the amount of proof-of-concept funding provided[23].

University of Warwick

The University of Warwick launched Warwick Innovations in April 2000, with the intention of protecting and commercialising the intellectual property developed at the University[24]. This body regulates the research and innovation of the institution—referred to as Creative Output—and determines the equity split of spin-out companies[25]. Some factors that are considered when making this decision include the creative effort of the founders, and the time, expertise and resources in the creation and commercialisation of the Creative Output[26].

University of Strathclyde

Having aided the commercialisation of research since 2002, the University of Strathclyde's technology transfer office sits within Strathclyde Inspire, a body which monitors all the entrepreneurial endeavours of the University[27]. The programme for commercialisation set out by Strathclyde Inspire outlines that the University will take a 20% equity stake post-seed round funding, irrespective of that seed round valuation[28]. This stake includes, but is not limited to, either support given by the university before the companies' formation or cash awarded at the time of spinning out.

IP policy reviews(cont)

University of Birmingham

University of Birmingham Enterprise, the new name of Alta Innovations, acts as the University's commercial arm[29]. It is responsible for working with students and staff to create a spinout where it is deemed to be the most appropriate commercialisation vehicle. The University's IP policy requires students and staff to declare and assign intellectual property rights to the university for inventions and innovations[30].

University of Southampton

The University of Southampton spun out its first company in 2000 and has since taken an equity position in a further 12 businesses. [31] The University navigates its commercial operations through the Research and Innovation Services, which determine the equity share awarded to founders of spinouts. The method and degree of compensating these individuals is decided on a case-by-case basis, with the expectation that these shares will be fair and equitable in the circumstances[32].

University of Sheffield

The commercial portfolio of the University of Sheffield is supported by their Research Services — a team that helps to fund University innovations with the view of supporting sustainable economic development. [33] The equity split afforded to the founding researchers is decided according to various factors, including the individuals' contributions to the intellectual property, historic patent costs, industry expectations, and the overall value of the founding intellectual property[34]. It is typical that the University would take a 20-40% share[35].

University of Glasgow

The Research Strategy and Innovation office at Glasgow University works as the commercialisation team monitoring those projects elected to spin-out[36]. These operations take place via the University's partnership with the venture capital company IP Group, which provides expertise and access to a dedicated Seed Investment Fund[37]. The split for spinout ventures is shared by awarding founders 50% of the business, with the University and IP group given 38% and 12%, respectively[38].

IP policy reviews(cont)

University of Nottingham

The University of Nottingham manages its portfolio of spin-out companies through its subsidiary Nottingham Technology Venture Ltd. When a commercially viable spin-out is formed, the initial equity distributions awards Founders with 50.1% of the business, with the University maintaining a 49.9% stake[39]. These shares can change in various situations, such as where the Founders receive options for more equity if they participate in the growth of the company[40].

University of Leeds

The University of Leeds has spun-out more than 110 companies since 1995, transforming academic research into commercial success for numerous businesses[41]. The process of reviewing and managing intellectual property is undertaken by RIS, the University's Research and Innovation Service[42]. There are two methods for determining an initial equity split for spinouts prior to external investment. If the company is an Intellectual Property based spinout, the founders will receive less than a 40% share, and if the businesses is service-based, they will receive between 40-60%[43].

Newcastle University

Newcastle University has supported several companies to commercialise their research and spin out from the institution. Their IP policy outlines that the University will usually take a 40% share of any spinout on formation, with the founders receiving a total share of 60%[44].

Heriot-Watt University

The enterprise team at Heriot-Watt University organises the formation of spinout companies and manages the intellectual property agreements between the university and the company founders[45]. The University's policy is to take a 24% dilutable equity stake of each spinout company, with the founders deciding amongst themselves how the remainder will be allocated[46].

IP policy sourcebook

The University of Oxford

[1] Oxford University Innovation - [Equity Sharing](#)

[2] Oxford University Innovation - [Equity Sharing](#)

The University of Cambridge

[3] University of Cambridge Enterprise - [Seeds of Change](#)

[4] Beahurst data

[5] University of Cambridge - [Intellectual Property Rights \(IPR\) Policy](#)

[6] University of Cambridge - [Intellectual Property Rights \(IPR\) Policy](#)

Imperial College London

[7] Imperial Innovations - [10 years of Success](#)

[8] Imperial Innovations - [Founders Choice](#)

University College London

[9] UCLB - [Company profile](#)

[10] UCLB - [About Portico Ventures](#)

[11] UCLB - [About Portico Ventures](#)

Royal College of Art

[12] Royal College of Art - [Innovation RCA](#)

[13] Royal College of Art - [Policy of Ownership, Protection and Exploitation of Intellectual Property Rights](#)

The University of Edinburgh

[14] Edinburgh Innovations - [Spinout companies](#)

[15] Edinburgh Innovations - [Spinout companies](#)

[16] The University of Edinburgh - [Spin-out Support Guide](#)

The University of Bristol

[17] University of Bristol - [Policy on Spin-out Company Formation](#)

[18] University of Bristol - [Policy on Spin-out Company Formation](#)

Swansea University

[19] Beahurst data

[20] Freedom of Information request - [WhatDoTheyKnow.com](#)

[21] Beahurst data

Queen's University Belfast

[22] Queen's University Belfast - [IP Policy](#)

The University of Manchester

[23] The University of Manchester - [Intellectual Property Policy](#)

IP policy sourcebook

The University of Warwick

[24] Warwick Innovation - [About us](#)

[25] Warwick University Regulations - [Patenting](#)

[26] Warwick University Regulations - [Patenting](#)

The University of Strathclyde

[27] University of Strathclyde Inspire - [Work with us](#)

[28] University of Strathclyde Inspire - [IP Policy & Commercialisation](#)

The University of Birmingham

[29] University of Birmingham - [Regulations](#)

[30] University of Birmingham - [Regulations](#)

The University of Southampton

[31] The University of Southampton - [Commercialisation](#)

[32] The University of Southampton - [Intellectual Property Regulations](#)

The University of Sheffield

[33] The University of Sheffield - [Commercialisation](#)

[34] The University of Sheffield - [Revenue Share](#)

[35] The University of Sheffield - [Revenue Share](#)

The University of Glasgow

[36] The University of Glasgow - [IP Commercialisation](#)

[37] The University of Glasgow - [Policy for Intellectual Property and Commercialisation](#)

[38] The University of Glasgow - [Policy for Intellectual Property and Commercialisation](#)

The University of Nottingham

[39] The University of Nottingham - [Intellectual Property IP Policy](#)

[40] The University of Nottingham - [Intellectual Property IP Policy](#)

The University of Leeds

[41] The University of Leeds - [Commercialisation](#)

[42] The University of Leeds - [IP Policy](#)

[43] The University of Leeds - [IP Policy](#)

The University of Newcastle

[44] The University of Leeds - [Policy on Ownership, Protection and Exploitation of Intellectual Property Rights](#)

Heriot-Watt University

[45] Heriot-Watt University - [Entrepreneurship](#)

[46] Heriot-Watt University - [Intellectual Property](#)

Appendix

- Full report methodology
- About the contributors



Full report methodology

Beauhurst tracks all spinouts deemed to have spun out on or after 1 January 2011. Spinning out from an academic institution is one of our eight triggers (outlined at the bottom of this page) that we believe suggests a company has high-growth potential. More detail on Beauhurst's tracking triggers is available via our website. Companies that spun out of an academic institution prior to 1 January 2011 may still be included in this report if they achieved one of the other seven triggers after 1 January 2011 and then were subsequently determined to be a spinout.

Equity investment

To be included in our analysis, any investment must be:

- Secured by an academic spinout (as defined opposite)
- Some form of equity investment
- Secured by a non-listed UK company
- Issued between 1 January 2011 and 31 December 2019

What is an academic spinout?

We define an academic spinout as a company that meets condition 1 and at least one condition out of 2-4:

1. The company was set up to exploit intellectual property developed by a recognised UK university or research institution (This is broadly in line with the Higher Education Statistics Agency's (HESA) definition of a spin-off)
2. The institution owns IP that it has licensed to the company
3. The institution owns shares in the company
4. The institution has the right (via an options or warrants contract) to purchase shares in the company at a later date

High-growth methodology

Beauhurst identifies ambitious businesses using eight triggers (outlined at the bottom of this page) that we believe suggests a company has high-growth potential. More detail on Beauhurst's tracking triggers is available via [our website](#).

Equity investment

To be included in our analysis, any investment must be:

- Some form of equity investment
- Secured by a non-listed UK company
- Issued between 1 January 2011 and 31 December 2021

Announced and unannounced fundraisings

An unannounced fundraising is an investment made into a private company that is completed without press coverage or a statement from the recipient company or funds that made the investment. These transactions are an integral part of the UK's high-growth economy, accounting for around 70% of all equity transactions.

High-growth tracking triggers



Equity investment



Academic spinouts



Scaleups



High-growth lists



Accelerator attendances



Major grant recipients



MBOs/MBIs



Venture debt

About the contributors

Beauhurst

Contact

4th Floor, Brixton House
385 Coldharbour Lane
London
SW9 8GL

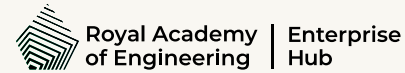
www.beauhurst.com
+44 (0)20 7062 0060
consultancy@beauhurst.com

Beauhurst is a searchable database of the UK's high-growth companies.

Our platform is trusted by thousands of business professionals to help them find, research and monitor the most ambitious businesses in the UK. We collect data on every company that meets our unique criteria of high-growth; from equity-backed startups to accelerator attendees, academic spinouts and fast-growing scaleups.

Our data is also used by journalists and researchers who seek to understand the high-growth economy, and powering studies by major organisations – including the British Business Bank, HM Treasury and Innovate UK – to help them develop effective policy.

For more information and a free demonstration, visit beauhurst.com



Contact

Prince Philip House
3 Carlton House Terrace
London
SW1Y 5DG

www.raeng.org.uk
www.enterprisehub.raeng.org.uk

The Royal Academy of Engineering is the UK's national academy for engineering. We are harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're driving innovation and building global partnerships, influencing policy and engaging the public, and growing talent and developing skills for the future.

The Enterprise Hub supports the UK's brightest technology and engineering entrepreneurs to realise their potential. Our goal is to encourage creativity and innovation in engineering for the benefit of all.



Editor Henry Whorwood
Production Dan Robinson, Freya Hyde, Alice Williams

© Beauhurst 2022