

Why is the UK so good at creating cutting-edge biotech firms?

Earlier this year, the Bioindustry Association reported that the UK's biotech companies are on track for a record-breaking year of fundraising, with over £830M flowing into the sector by the end of February. Compared to this time last year, the UK's biotechs have raised more than double the amount of venture capital for new companies.

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Those early-stage companies are 'growing up' with highly successful IPOs, too. So far in 2021, we've already seen the likes of Adaptimmune, Immunocore and Achilles Therapeutics raise \$258M, \$191M and \$176M respectively through their NASDAQ debuts. Oxford Nanopore has announced it will list on London's FTSE later this year, with analysts valuing it at between £4B and £7B.

They join a list of luminary UK biotech companies that have trodden the same IPO path in recent years, such as Freeline, which raised \$158M in 2020, and Orchard Therapeutics, which raised \$225M in 2018.

Targeted biotech investment

While the UK has struggled to produce a critical mass of tech scaleups in other fields, the UK finds itself blessed with an abundance of cutting-edge firms that are leading the way. This is something we can surely all appreciate when the continuing positive data from COVID vaccines makes

us acutely aware of how important biotech innovation can be.

This investment success on public markets doesn't happen by accident, and in fact, each of those companies has something important in common. In each case, they have 'spun out' of British universities by commercialising the fundamental research and discoveries made in labs.

The UK punches well above its weight when it comes to research-intensive universities, and depending on your favourite league table, it is home to at least 15 of the world's top 100.

Where the UK particularly excels in generating biotech spinouts is through the ecosystems and networks that surround those universities, which play an important role in actively sparking and fostering innovation.

For example, many of UCL's researchers in our School of Life and Medical Sciences are clinicians and hold cross-appointments with partner hospitals. It means that world-leading researchers spend a portion of their time working with patients in the clinics they run.

The close links they forge with patients means they can identify new priorities and avenues for their research that are based on real-world needs, and as that research moves forward, it can be proven in real-world clinical settings.

Freeline Therapeutics illustrates this perfectly. It is developing innovative and potentially life-changing gene therapies that could transform how diseases like haemophilia B and Fabry disease are treated. Instead of requiring a lifetime of continual treatment, it is aiming to create one-time gene therapy treatments, which could significantly improve quality of life and outcomes for patients.

These treatments build on the pioneering work of Amit Nathwani, professor of haematology at the UCL Cancer Institute, who also holds a

clinical appointment with the Royal Free London NHS Trust.

The fundamental discovery emerged from that combination of roles. In addition to his academic and clinical roles, Professor Nathwani remains Freeline's clinical and scientific adviser and director. He's also a serial innovator and entrepreneur, and was recently announced as CEO of NovalGen, a pre-IPO biotech company also spun out of UCL that is pursuing breakthrough cancer treatments.

The important role of commercialisation expertise

While those links between leading clinical environments and researchers are crucial, so is expertise in technology transfer and commercialisation.

When those breakthrough biotech discoveries are made and proven, organisations like UCL Business help researchers to begin turning them into commercial products that benefit the world at large. That includes helping to understand the scale of the opportunity a new biotech product might create. We also help them to walk down the pathway for getting it there, such as setting up a spinout company, patenting the new discovery, undertaking clinical trials and building the industrial partnerships.

There is no one size fits all approach to doing this well, and it relies on a range of skilled, expert staff who often have experience in academia or innovative businesses themselves.

What is helping the UK to excel is the commitment to sharing best practice. Initiatives like TenU, which brings together ten leading technology transfer offices, give us the forum to do that. TenU includes six leading UK universities amongst its membership.

Of course, bringing new spinout companies all the way from lab to IPO comes at a price, and investors play an important role. They back the investment that new biotech spinouts need to establish themselves and bring their products to market.

The UK's universities are innovative in this field, too, and are increasingly taking steps to make sure they have the funding they need, which is helping drive the success of its biotech firms.

The Universities of *Sheffield*, Leeds and Manchester recently announced a 'Northern Gritstone' investment fund that could drive up to £500M into their spinouts.

UCLB partners with AlbionVC to co-manage the UCL Technology Fund and is a partner in Apollo Therapeutics. Their involvement means we can support the very best and brightest ideas from our university from their earliest stages and help see them through to IPO.

What could be missed is that the UK's habit of generating successful biotech IPOs is establishing a virtuous circle. Great innovation is being backed by private investors at its early stages, and those early-stage investors are seeing their support rewarded when those companies publicly list, meaning they can reinvest in the next generation of exciting companies. A rising tide is lifting all ships.

Bringing all these components together - researchers, universities, tech transfer and investors - is the real secret to the UK's growing list of leading biotech companies, and long may it continue.

Dr Anne Lane is CEO of *UCL Business*.

