Life Sciences Strategy

for the Cambridge cluster

The **Cambridge cluster life sciences** strategy

A cohesive Cambridge life sciences vision and strategy is needed to maintain the region as a global destination for life sciences talent and investment.

Informed by leaders across the Cambridge life sciences and healthcare community, this strategy has been crafted by Cambridge University Health Partners (CUHP) on behalf of the Cambridgeshire ecosystem.

Life sciences community partners have embraced the strategy. By inspiring and organising collaboration, we aim to ensure everyone benefits from the work of our world-class researchers, clinicians and industry scientists.

Delivery partners

CAMBRIDGE UNIVERSITY Health Partners

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Innovate Cambridge

The Cytosponge: an early cancer detection device invented by Professor Rebecca Fitzgerald OBE, University of Cambridge

Setting the scene

Our scientific innovators hold the key to tackling a growing global health burden. We must support their search for solutions to new threats posed by the rise in mental health disorders, ageing populations, poor diet, extreme weather events and air pollution.

With its unique mix of academia, NHS and industry, working side by side in one close-knit city, Cambridge is one of the most collaborative and innovative life sciences and healthcare ecosystems in the world.

This strategy details how we can sustain our globally outstanding ecosystem.

The **Cambridge ingredients**

30+

science and technology campuses, including one of the largest in Europe

2

leading universities, providing higher education, with their own specialised research institutes

3

leading research-active NHS trusts, working in physical and mental health

4

world-class research institutes, Babraham, Wellcome Sanger, MRC Laboratory of Molecular Biology and EMBL European Bioinformatics Institute

600+

life science companies, from start-ups to multinationals, including Abcam, AstraZeneca, GSK and Illumina

One of the UK's leading medical schools in the **University of Cambridge's School of Clinical Medicine**

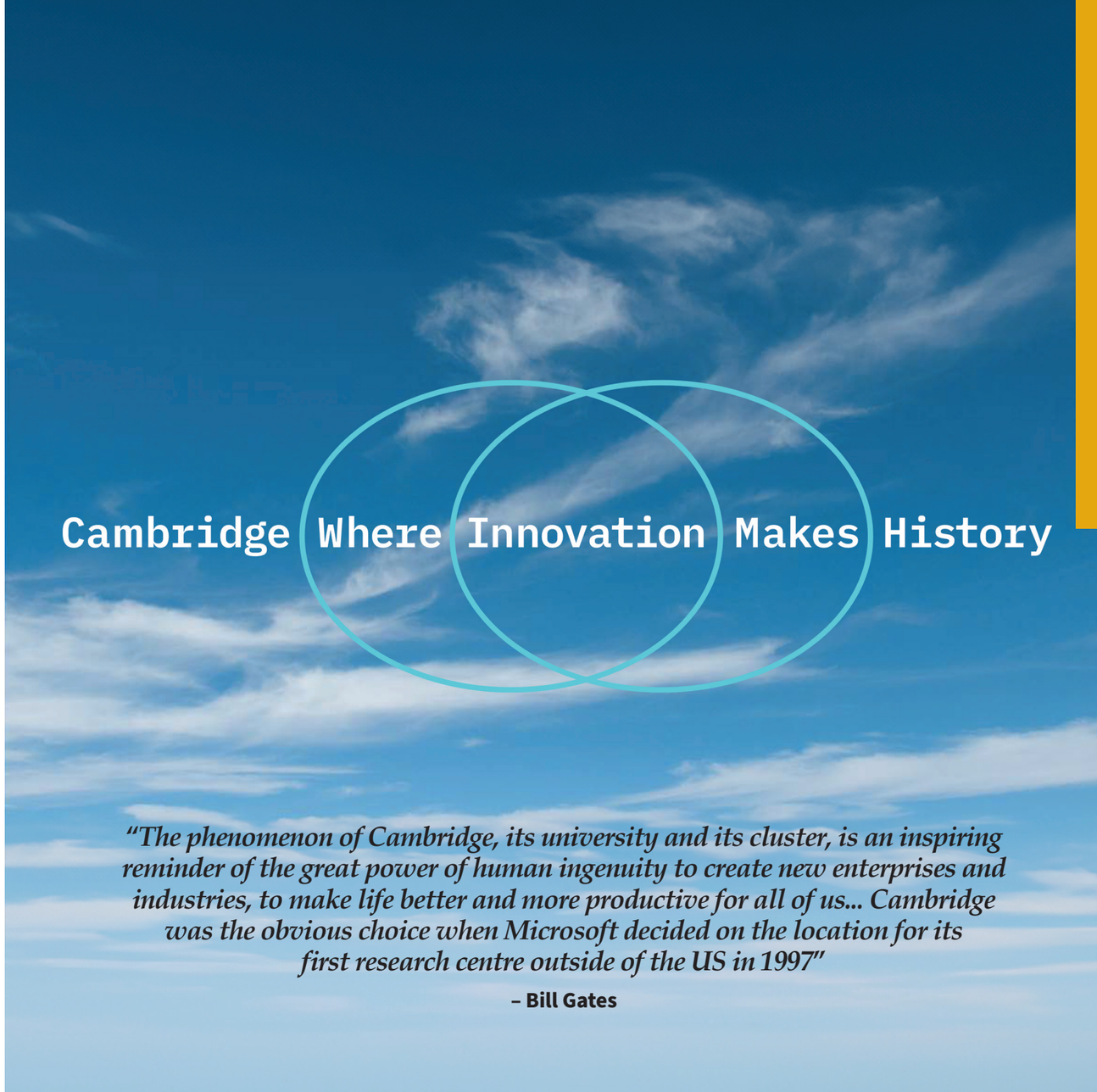
A culture of **world-changing innovation** stretching back hundreds of years

Funding from some of the UK's largest charities, **British Heart Foundation** and **Cancer Research UK**

Access to **integrated, high-quality** health, genomic, biological, social and economic **data**

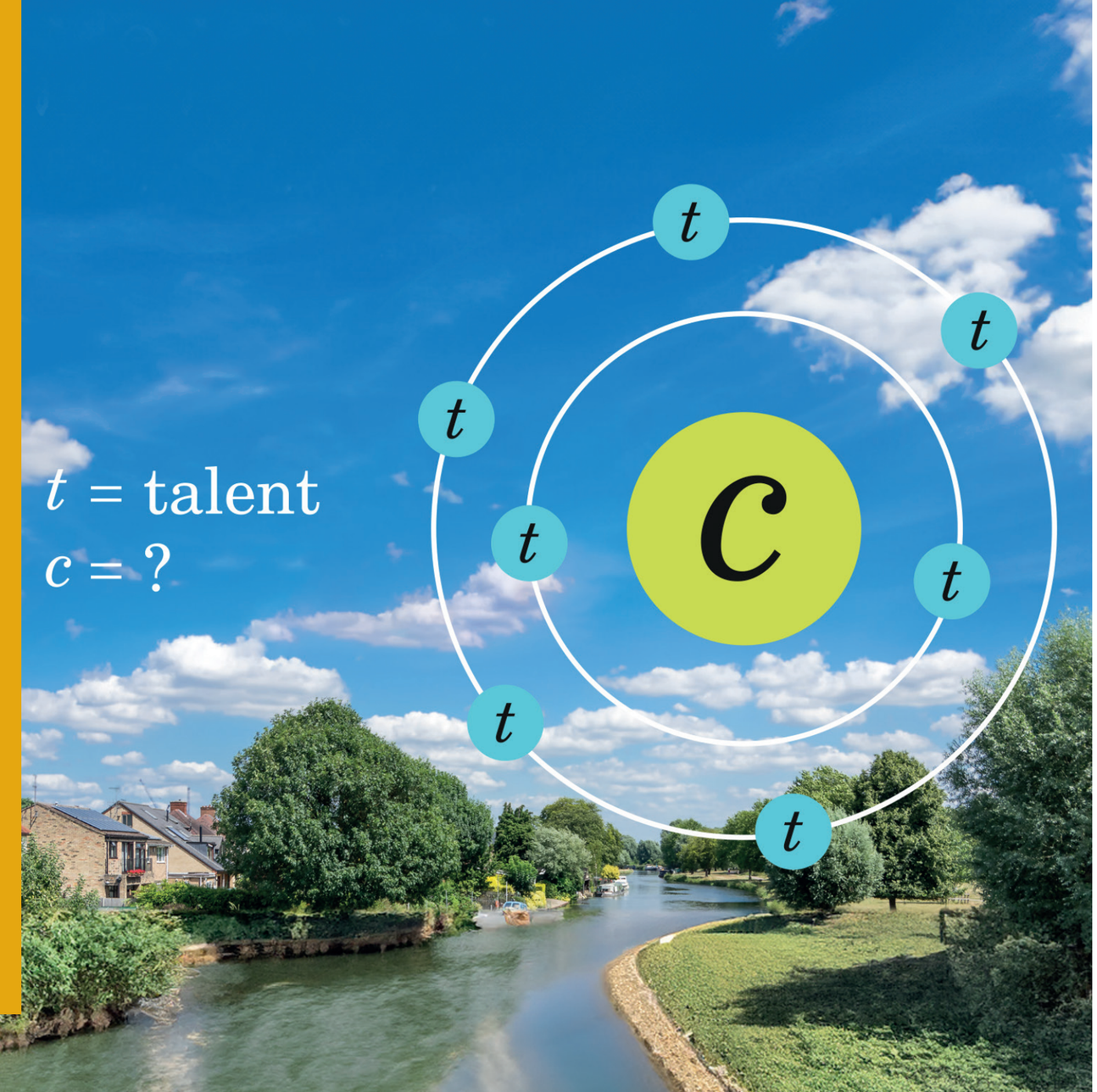
"A safe place to do risky things"

– Dr Andy Richards CBE



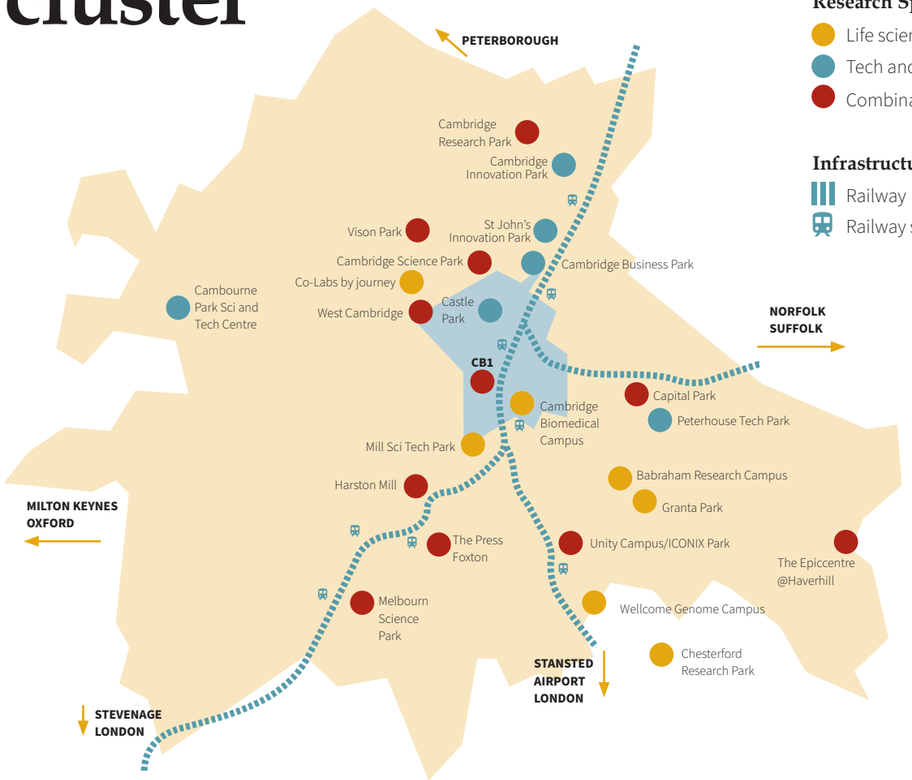
"The phenomenon of Cambridge, its university and its cluster, is an inspiring reminder of the great power of human ingenuity to create new enterprises and industries, to make life better and more productive for all of us... Cambridge was the obvious choice when Microsoft decided on the location for its first research centre outside of the US in 1997"

– Bill Gates



Cambridge

Europe's largest biotechnology cluster



KEY

- Cambridgeshire clusters
- Cambridge City

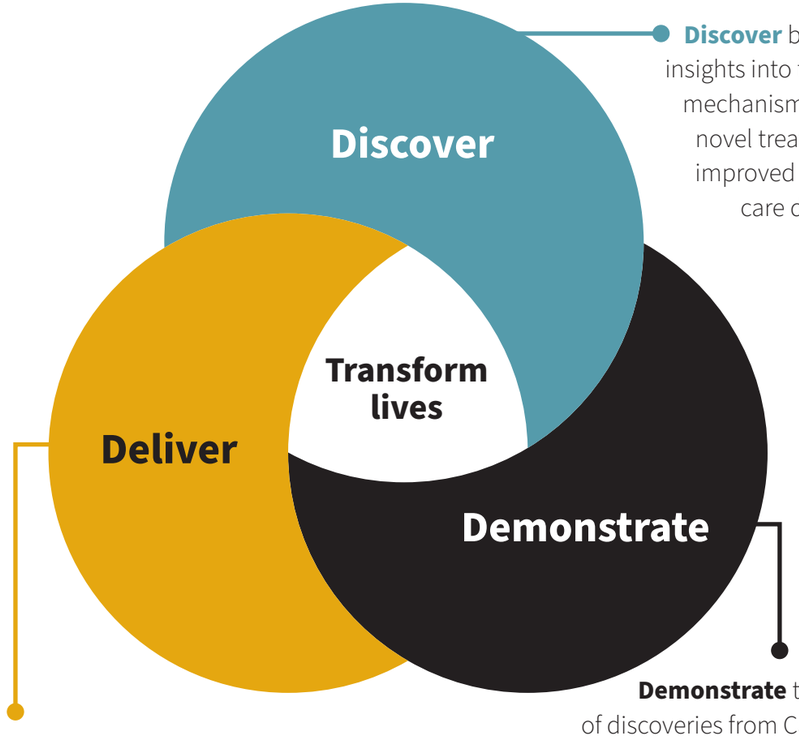
Research Specialism

- Life sciences
- Tech and digital
- Combination or non-specific

Infrastructure

- Railway
- Railway station

The Cambridge strategy for **changing the world**



Discover breakthrough insights into the underlying mechanisms of disease, novel treatments and improved systems for care delivery

Deliver health, social and economic impact by scaling breakthrough discoveries at pace

Demonstrate the value of discoveries from Cambridge and beyond in real-world populations and health systems, using integrated health, social and economic data

Cambridge highlights

21 **Nobel Prizes**
awarded to Cambridge STEM scientists since 2000

300+ **patents**
per 100,000 residents – double any other UK city – driving UK innovation

No 1 **in the world**
highest-intensity science and technology cluster – Growth Innovation Index 2022, 2023 and 2024

9 STEM subject areas at the **University of Cambridge**
ranked top in *The Times* and *The Sunday Times* Good University Guide 2025

90%
of DNA and RNA sequences
produced worldwide stem from Solexa-Illumina's next-generation DNA sequencing

$950m
(£725m) of venture funding
was invested into life sciences start-ups and scale-ups in the Cambridge area between 2015 and 2020

1/3
of world's new drugs today
are monoclonal antibody technologies, which have their birthplace in Cambridge. This is in addition to DNA structure, IVF, modern computing, and Dolby sound

26
'unicorn' $1bn companies,
including Abcam, ARM, Bicycle Therapeutics, Cambridge Antibody Technology, CMR, Darktrace, GW Pharmaceuticals and Solexa

19%
annual growth in turnover and 10% in employment, outpacing every other sector in Cambridge over the past three years

600+
life science companies
based in Cambridgeshire, including AstraZeneca, which is the single largest R&D investor in Europe

6 **of top 10**
drugs in use across the world were developed in the Cambridge cluster

Discover | Demonstrate | Deliver

Cambridge cluster life science goals

Within a decade we can:

Discover | Demonstrate | Deliver

remain No 1
intensive science and technological cluster globally

+50%
increase in high-quality start-ups

min. £11.5m total funding

+10
increase in number of globally influential researchers

Clarivate Highly Cited Researchers

+10%
increase in world-leading publications

Nature Index

x3
academic mid- to long-term strategic partnerships with industry

30
new innovations tested in NHS Trust landing zones

850
active portfolio clinical trials

90%
of clinical trial participants recruited to time and target

10
new billion-dollar life science companies

5-year
reduction of the regional inequality gap for people living in good health

£18bn
target for gross value added (GVA) by life sciences

x3
increase in jobs generated by life science and healthcare sector

Our **five-pillar strategy** to stay **world-leading**

To remain a destination of choice for global life sciences, we need to invest in the five pillars: **Talent, Place, Data, Funding and Network**

Discover

Demonstrate

Deliver

Nursing training at Anglia Ruskin University

Attracting the best **Talent**

Foster and attract the skills, and develop the culture required for discovery and innovation

Our progress so far

- Anglia Ruskin University (ARU) has launched a dedicated School of Apprenticeships
- Championing a regional Opportunities Hub to support brokerage, placements and mentorship across the cluster, including flexi-job apprenticeships
- Increased apprenticeship numbers and creation of new courses in response to workforce needs, such as laboratory scientist and data scientist degree apprenticeships
- Cambridge University Hospitals ranked in the top 10 of health and social care UK Apprenticeship Employers 2024
- Initiation of a pilot to support apprenticeship brokerage on the Cambridge Biomedical Campus

What's next?

- Foster a collaborative and diverse workforce with a culture that embraces innovation
- Support for specialisms beyond the traditional life sciences knowledge engine, including data, AI, machine learning, engineering and green skills
- Develop a multidisciplinary talent pool that expects talent to move between, and work across, different institutions, take risk, value diversity and drive impact from discoveries
- Facilitate a range of entry levels to life sciences employment, to leverage local talent and wider regional economic benefit from cluster activity
- Embed commercial awareness and leadership training and mentorship, to enhance and nurture an entrepreneurial culture
- Encourage inward investors to bring in new international growth talent to support scaling businesses and to provide a scale-up talent linkage service

Key enabler: 2,000 new health and life sciences apprenticeships

Royal Papworth Hospital, the first NHS hospital trust to receive "outstanding" across all five areas by the Care Quality Commission (CQC)

Creating the best **Place**

Develop the infrastructure to support discovery and innovation, while creating an environment in which talented people want to work and live

Our progress so far

- Outline business case and planning approved for two specialist hospitals, plus £3m provision for future care planning in the 2024 Budget
- Place Forum established to facilitate planning and coordinated input to future Cambridge developments
- Delivered space capacity for life science innovation, including co-labs-by Journey (West Cambridge), The Press by Mission Street (Foxton), BioMed Realty and Babraham Research Campus development and 1000 Discovery Drive on the Cambridge Biomedical Campus

What's next?

- Future-proof research facilities and develop core shared infrastructure and assets that support physical and virtual collaboration, serving specific disease foci and new research interfaces
- Support NHS trusts to create fit-for-the-future healthcare facilities that support research and innovative models of care
- Provide flexible space for business at all stages of the translational pipeline, and seek funding and partnerships to deliver additional incubator, accelerator and prototyping space
- Ensure local clusters can support a high quality of life, with effective and sustainable long-term transport solutions and infrastructure to support productive and liveable communities

Key enabler: 10 millon square feet of new space for life sciences

Curating an integrated and accessible **Data** environment

Put world-leading, trusted and accessible healthcare and research data to work

Our progress so far

- Secured £10m to develop and co-lead Secure Data Environment that will collect healthcare data from across the eastern region and make it accessible for research
- Building out integrated research data infrastructure through use cases such as BloodCounts! and Cynapse
- Support for joined-up data governance initiatives such as Consent for Contact campaign and Statement of Principles
- Wellcome Sanger Institute and EMBL-EBI add to the Human Cell Atlas project with the Human Lung Cell Atlas, enhanced Heart Cell Atlas, and location of cells of the early human limb

What's next?

- Build public trust and engagement in the use of healthcare data
- Identify and develop data assets that improve care delivery, fuel discovery and allow the evaluation of innovation
- Build data assets that are diverse, inclusive, representative, and transparent
- Democratise and simplify the architectures and infrastructure, to support development and access to data assets
- Partner with national and global experts and develop commercial approaches that allow co-development and access to data assets

Key enabler: 100% accessibility of useable NHS data

Bringing **Funding** into the cluster

Increase access to a range of funding mechanisms to support discovery, translation and scale-up

Our progress so far

- New investment and talent into the ecosystem: Automata, BioNTech, Novo Nordisk
- Dedicated ecosystem Investor Engagement Manager to facilitate relationships with global investors, hosting multiple USA venture capitalists annually
- First UK investment by Flagship Pioneering of £50m into Quotient Therapeutics
- Multi-million funded Cambridge life sciences consortium, with the Advanced Research and Invention Agency (ARIA), will fast-track radical new technologies to revolutionise brain health
- GSK is investing more than £50m into the Cambridge-GSK Translational Immunology Collaboration (CG-TIC). This five-year collaboration aims to increase the precision of immune-related disease treatments with new and existing therapies

What's next?

- Leverage government funding with charity, philanthropy and industrial partnerships, providing larger pools of seed and growth capital
- Fill the gaps in current funding proposition by attracting new investors to the cluster and supporting investment of UK capital into life sciences
- Increase commercial research and care delivery partnerships
- Develop cross-institutional funding propositions for UK government, philanthropy, industry and venture capitalists
- Support long-term UK patient capital flow into our life sciences sector

Key enabler: 50% increase in annual Cambridge cluster investment

Networking in Cambridge at the 2024 Innovate Cambridge summit

Supporting capabilities through the **Network**

Evolve our mechanisms and support capabilities for partnerships, internally and externally

Our progress so far

- Delivering the life sciences arm of Innovate Cambridge, including helping to develop the strategic partnership with Manchester
- Established landing zones across NHS providers to support innovation and adoption
- Developed linked innovation function within Cambridgeshire and Peterborough Integrated Care Board
- Royal Papworth and Cambridge University Hospitals co-location and sharing of training and clinical services
- Biannual Life Sciences Advisory Council meeting established for the Cambridgeshire ecosystem

What's next?

- Develop our Integrated Care System and Primary Care Networks in a way that optimises care and facilitates discovery, proving and scaling of innovation
- Build on landing zones in our healthcare providers for adoption, evolution and evaluation of innovation
- Strengthen and simplify the ability to rapidly execute legal, commercial, intellectual property and ethics arrangements across the NHS, academia and industry
- Expand, coordinate and simplify the landscape for early translation
- Develop our shared narrative and external communication

Key enabler: Double the number of accelerator and incubator facilities

What next? **Five areas to revolutionise healthcare**

Looking ahead, we will focus on developing five scientific areas in which Cambridge has the ingredients to excel, working with partners across the ecosystem to galvanise various existing proposals for these areas into one coherent story, which can be taken to politicians, investors and philanthropists.

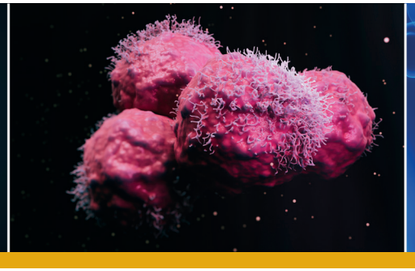
The fly connectome: the first wiring diagram of every neuron in an adult fly brain. Produced by the Flywire Consortium, which includes researchers from the University of Cambridge and the MRC Laboratory of Molecular Biology

Addenbrooke's oncologist Professor Raj Jena using OSAIRIS; an AI system he co-invented with Microsoft, which is able to mark out radiotherapy scans 2.5x faster than a human

Our propositions

Playing to the **Cambridge strengths**

Missions

Deciphering and healing the brain	Early diagnosis and prevention of cancer	Maintaining healthy hearts and metabolism	Helping people breathe easily	Setting people up for lifelong health
				

Cross-cutting enablers

- **Maximising the potential for translation and health service adoption across all modalities**
- **Continue to push forward the boundaries of genomics and the utilisation of our immune systems**
- **Harnessing compute and AI capabilities to transform healthcare**
- **Making our science work for neglected communities**

Versius: a lightweight and mobile surgical robotic system enabling less invasive surgery, developed in Cambridge by CMR Surgical, manufactured in Ely

What does **this strategy mean** to you?

We intend to deliver globally differentiated and impactful outcomes for health and life sciences, in a place people want to live and work

Local population
World-class personalised healthcare, jobs in life sciences of every kind, great place to live and work that celebrates diversity and supports neglected communities

Entrepreneurs
Access to funding, expertise, talent and shared resources, and ability to rapidly prove value; integrating discovery expertise

Research funders and investors
Discoveries that deliver impact sooner in the real world; a growth mindset rooted in improving lives and valuing commercial skill sets

Developers/commercial agents
Development of facilities in full partnership, with focus on maximising long-term benefit for all

Researchers, clinicians and professionals
Ability to work at leading edge of science and care, with opportunities for flexible career paths and competitive remuneration

Health and care providers
Local integration; commercial partnerships; and a population dataset that enables value-based care delivery and innovative treatments

Technology life sciences companies
Access to ideas that cross boundaries; a place where employees want to be that provides opportunities to test new concepts rapidly

Local and national government
Enhanced UK global reputation and competitiveness via research business opportunities facilitated throughout the UK

CAMBRIDGE UNIVERSITY Health Partners

About Cambridge University Health Partners

Cambridge University Health Partners (CUHP) is one of eight Academic Health Science Centres in England whose mission is to improve patient healthcare by bringing together the NHS, industry and academia.

The partners are Anglia Ruskin University, the University of Cambridge, Cambridge and Peterborough NHS Foundation Trust, Cambridge University Hospitals NHS Foundation Trust, and Royal Papworth Hospital NHS Foundation Trust.

Innovate Cambridge

About Innovate Cambridge

Innovate Cambridge is an initiative to promote the Greater Cambridge innovation ecosystem over the next decade, being the custodian of the innovation strategy and convenor of the ecosystem. The Innovate Cambridge mission is to ensure pioneering discoveries are successfully translated for local and global impact.

The initiative has more than 100 signatories to the charter, joining the three initiators – tech transfer office Cambridge Enterprise, investor Cambridge Innovation Capital, and the University of Cambridge.

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

About Cambridgeshire & Peterborough Combined Authority

The Cambridgeshire and Peterborough Combined Authority was created in 2017 after a historic agreement between the UK government and the seven councils that together make up the Mayoral Combined Authority.

It has a range of responsibilities including transport, infrastructure, planning, economic growth, business support and adult education. It plays an important role in developing bold, ambitious plans for the future, advocating for and representing the region to bring in investment and funding to grow the economy for the benefit of all.