
# OXFORDSHIRE LIFE SCIENCES AND HEALTHCARE

Invest in a world-beating innovation ecosystem

OxLEP
driving economic growth

# INVEST IN A DYNAMIC ECOSYSTEM WITH UNLIMITED POTENTIAL

## 10 REASONS TO CHOOSE OXFORDSHIRE

1. One of the world's leading innovation hubs and the crucible for the development the Oxford Astra Zeneca vaccine
2. Within the UK's 'Golden Triangle' of economic growth and innovation
3. Access to leading experts working at some of world's greatest research centres
4. Opportunity to collaborate with exciting spin-outs from the University of Oxford
5. Life sciences ecosystem facilitates exchange of knowledge and access to facilities
6. Grade A office and lab space for businesses of all sizes, offering scalability
7. Infrastructure to support delivery of clinical trials at world recognised centres of excellence
8. Skilled, highly-educated workforce
9. Universities and other educational institutions with a focus on health and life sciences provide a steady stream of talent
10. Excellent connectivity to London and beyond by rail and road, plus easy access to major airports

*The Rosalind Franklin Institute at Harwell*

# LEADING THE RESPONSE TO COVID-19

Oxfordshire's well-established life sciences ecosystem – from its pioneering academic and medical institutions to its unique research establishments and many biomedical companies – mobilised rapidly in response to Covid-19. Scientists at the Jenner Institute, led by Sarah Gilbert, were working on developing a vaccine as early as January 2020. The county's long-held expertise in vaccinology and immunology has been at the foundation of its world-renowned work in medicine, research and diagnostics. This reputation, along with the collaborative, innovative and pioneering approach which was demonstrated so ably in the fight against Covid-19, has been a significant factor in attracting life sciences companies to the region.

Oxfordshire's response included:

- Virology, genomics and structural biology research
- Vaccine and treatment research, clinical trials and manufacturing
- Diagnostics development
- Data, digital services and shared information
- Medical devices

## MALARIA BREAKTHROUGH

A team led by Adrian Hill, director of the Jenner Institute and professor of vaccinology at the University of Oxford, has developed the first malaria vaccine to reach the World Health Organisation's goal of at least 75% efficacy. Initial trials with 450 children in Burkina Faso have shown the vaccine to have a high level of efficacy and larger trials are now being carried out across four African countries. Malaria kills more than 400,000 people a year, and while many vaccines have been trialled over the years, this is the first to meet the required target. Finding a malaria vaccine is a hugely complex technical challenge as there are thousands of genes in malaria and a very high immune response is needed to fight off the disease. This significant breakthrough has the potential to have a major public health impact.

Coronavirus treatment + Add to myFT

### Vaccine cements Oxford's place as leader in battle against Covid

University recognised the virus threat early and launched a full-scale research onslaught


Oxford university runs the world's biggest clinical trial of Covid-19 treatments © FT montage; Dreamstime

**Clive Cookson** in London NOVEMBER 24 2020

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Oxford university has emerged as a global leader in the scientific battle against coronavirus — a bright spot in the UK's generally less than stellar record in handling the pandemic.

The university was in the spotlight on Monday for the vaccine that reported encouraging efficacy results, but it also runs the world's biggest clinical trial of Covid-19 treatments and leads academic analysis of infections for the UK's Office for National Statistics, among other coronavirus projects.

No other university anywhere can match what Oxford has achieved, according to Peter Hale, executive director of the Foundation for Vaccine Research in Washington DC. "They were first out of the gate on coronavirus research back in January and have kept their frontrunner status," he said. "I consider them 'the little engine that could'."


UK volunteers could be given the first dose of a potential vaccine within the next week © Sean Elias

Although many top universities have larger medical facilities, Oxford has been top of the Times Higher Education world rankings for medicine for nine years. "People don't realise the enormous medical research power of Oxford," says Gavin Screaton, head of its medical sciences division.

Combined with that overall strength was the university's policy, dating back several decades, of building up expertise in diseases of poorer countries — with a particular focus on emerging infections. It maintains nine overseas medical

# A GLOBAL HUB OF LIFE SCIENCES INNOVATION

**Oxfordshire is one of Europe's most successful Life Sciences clusters with a track record in establishing and attracting world leading life sciences businesses.**

- Home to the University of Oxford, Oxfordshire is part of the UK's 'Golden Triangle', forming an area of significant economic growth and expertise in Life Sciences and Health, alongside Cambridge and London.
- The cluster of Life Sciences and Health companies in Oxfordshire provides a critical mass that spurs innovation through extensive multidisciplinary collaboration.
- The Oxfordshire Local Industrial Strategy positions the county as one of the top-three global innovation ecosystems. It highlights Oxfordshire's world-leading science and technology cluster and its unsurpassed potential to be a pioneer for the UK through its emerging transformative technologies and sectors.
- The Oxford-Cambridge Arc will leverage the opportunity for collaboration between the two key economic areas, drawing on their scientific expertise to deliver growth and prosperity.
- Foreign owned companies who have expanded or established operations in Oxfordshire during the last three years include Novo Nordisk, Intuitive Surgical, Abbott Diabetes Care, Oxitec (part of Precigen), Evotec, Sysmex, Agilent and Vertex.

## OUR LIFE SCIENCES COMMUNITY INCLUDES

sysmex
ResMed
VERTEX
Oxford Biomedica
Oxford NANOPORE Technologies
Sensyne Health
Agilent
Penlon
OWEN MUMFORD
aptuit
SIEMENS
Abbott Diabetes Care
novo nordisk®
Adaptimmune TRANSFORMING T CELL THERAPY
IMMUNOCORE
OXITEC
INTUITIVE
IPSEN Innovation for patient care

# GLOBALLY-IMPORTANT RESOURCES


# WORLD-LEADING SCIENCE AND INNOVATION CENTRES

**Oxfordshire has the key ingredients that make up a world-class innovation ecosystem: a flourishing environment for innovation and business creation; world-leading experts in knowledge and technology development; and a dynamic, agile, and skilled workforce.**

Over 200 research and technology companies in health sciences, med tech, space applications and energy operate on **Harwell Campus**. The site houses one of Europe's largest space cluster of over 100 growth companies. Critical assets include the Diamond Light Source, the Rosalind Franklin Institute, Faraday Institution, UK Space Agency, European Space Agency, Rutherford Appleton Laboratory, and VMIC, the UK's first dedicated Vaccines Manufacturing Innovation Centre.

**Culham Science Centre** hosts over 2,000 scientists carrying out world-leading research into areas such as fusion power and autonomous vehicles as well as life sciences.

University of Oxford's Begbroke Science Park focuses on advanced engineering and medical tech for 35+ world leading research & technology companies. By 2032, a £2 billion programme will co-locate engineering, physical and life sciences research to Begbroke's global innovation campus, to work directly with industry.

The University of Oxford's Old Road Campus is home to world-leading clinical medical research and is close to Oxford's hospitals. (see page 16 for more details)

The **Oxford Science Park** is home to more than 100 companies, from start-ups to multinationals, working within a vibrant R&D and commercial community. It offers a variety of design-and-build office and laboratory accommodation.

**Milton Park** is a science and technology park home to 250 companies and 9,000 people and forms one of the largest science clusters in the UK.

**Oxford Technology Park** is a new science and technology park that offers flexible office and R&D space to the north of Oxford. The site is located adjacent to London Oxford Airport and with nearby access to London by rail.

**Oxford Business Park** is an innovation based community. It is close to the city centre and hosts over 60 science, technology and service companies. It offers workspace to suit all sizes of businesses and an amenity rich environment.

**Oxford North** is a new 60-acre life sciences district for Oxford, to meet the new demand for inward investment in the sector. It will include new laboratories and workspaces for biomedical science as well as new homes and public parks to retain and attract global science research talent.

**Howbery Park** is the UK's first solar powered business park. It provides a range of sustainable office space for science and technology businesses set within parkland on the banks of the River Thames.

**The Quadrant Abingdon Science Park** offers a series of terraced commercial units suitable for either offices or laboratories.

The **DiagnOx Laboratory** in Heyford Park is a managed and equipped laboratory facility for early development work. It also offers grow-on lab space.


LEADING ADVANCES IN...

# DRUG DISCOVERY AND DEVELOPMENT

**Therapeutics R&D is at the heart of Oxfordshire's life science industry, supported by a group of world-class contract research and manufacturing organisations.**

International biopharma companies with a long-standing presence in the region include Amgen, Aptuit, and Jazz Pharmaceuticals.

Vertex, a global biotechnology company committed to furthering scientific innovation in the UK since 1998, has its UK research site in Milton Park. Vertex invests in scientific innovation to create transformative medicines for people with serious diseases. It discovered and developed the first medicines to treat the underlying cause of cystic fibrosis, and has a pipeline of small molecule medicines and cell and genetic therapies.

Ipsen Bioinnovation is home to the French pharma company's UK R&D functions with about 100 employees at Milton Park, including researchers devoted to neuroscience alongside other R&D professionals.

The University of Oxford has world class drug discovery capabilities with particular specialisms in antibiotics, cancer and cardiovascular disease. The Target Discovery Institute is a major cross discipline collaborative initiative that draws together expertise of research staff across the university.

The Vaccines Manufacturing Innovation Centre (VMIC) on the Harwell Science and Innovation Campus is a highly specialist facility that will house the country's first bespoke strategic vaccine development and manufacturing capability. Planned in advance, its construction has been fast-tracked. VMIC is working to be partially open in 2021 and to be operational in 2022. When operational, VMIC will have the capability to manufacture up to 70 million doses of pandemic vaccines within a six month timeframe. Founded by the University of Oxford, Imperial College London and the London School of Hygiene and Tropical Medicine, the VMIC is helping to scale up all vaccines. As part of the national vaccines industry taskforce, its expertise has helped devise the 'Virtual VMIC' to enable vaccine manufacture until the main facility is ready.

*The Rosalind Franklin Institute*

The Rosalind Franklin Institute is a new national institute, funded by the UK government through UK Research and Innovation (UKRI). Focused on five complementary themes, new technologies will produce insight that will speed up drug design and development, and push forward our understanding of human health and disease. The Institute has chosen Harwell Campus as its central hub and will house a unique portfolio of scientific tools and researchers from both industry and academia.

Key CROs and CMOs operating in Oxfordshire include Evotec, ICON, Eurofins, Ludger and Patheon and benefit from Oxfordshire's easy access to lab personnel and proximity to key transport hubs.

LEADING ADVANCES IN...

# PRECISION MEDICINE AND GENOMICS

**Oxfordshire is at the forefront of developments in the rapidly evolving fields of precision medicine and genomics.**

The recently launched Nucleic Acid Therapies Accelerator (NATA) is a new national research initiative based at Harwell Campus. Its mission is to unlock the potential of precision genetic medicines and accelerate the development of nucleic acid (NA) therapies. The initiative will capitalise on the UK's industrial and academic base to accelerate new therapies, within a state-of-the-art facility.

The University of Oxford is leading global efforts to define, classify and understand disease at the molecular level. It is home to world-renowned academic centres and institutes investigating genomic medicine and clinical genetics such as the Wellcome Trust Centre for Human Genetics and the Big Data Institute.

The strength of this research - together with the exceptional data resource available from initiatives such as the Oxford Radcliffe Biobank, UK Biobank, 100,000 Genomes and Dementias Platform UK - is attracting intense interest from the biopharma and healthcare sectors, and has given rise to a number of prominent spin-out companies.

Oxford BioTherapeutics (OBT) is a clinical stage oncology company committed to the discovery and development of novel therapies for various cancer types. With its global headquarters in Milton Park, and US operations in New Jersey and San Jose, its team of international immuno-oncology experts has built one of the world's largest integrated oncology immune cell surface protein libraries and it has proprietary immune-oncology and antibody-drug conjugate pipelines. In 2012 Italian pharmaceutical company Menarini Group agreed to invest $800 million in the company over a multiyear timespan.

Oxford Gene Technology (OGT), recently acquired by Japanese-owned company Sysmex, provides genetics research solutions to leading clinical and academic research institutions. Based at Oxford University's Begbroke Science Park, OGT has developed a class-leading product portfolio in molecular genetics and next-generation sequencing (NGS) sample preparation. The company has customers in over 60 countries.

Other companies include Oxford Cancer Biomarkers, Adaptimmune which is focused on the use of T cell therapy to treat cancer and Cellmark Forensic Services (a genotyping and DNA analysis company).

Opening in 2021 the Institute of Developmental and Regenerative Medicine will bring together over 200 researchers and specialists in cardiology, immunology and neuroscience. Currently under construction at Old Road Campus, the new £35m centre is the first institute of its kind in the world to physically merge the disciplines of developmental biology and regenerative medicine in a common goal to treat some of the world's most prolific diseases. It aims to improve understanding of normal biological development and apply this learning to help deliver advanced therapies that can repair the damage caused by a range of debilitating diseases.

OxStem is a regenerative medicine drug discovery company spun out for Oxford University developing small molecule drugs that can activate repair mechanisms that already exist within the body. The company which raised a record £16.9m in funding in 2016 has already launched 6 subsidiaries each focused on an largely unmet therapeutic need: cardiac failure, neurodegenerative diseases, macular degeneration, diabetes and chronic inflammation and wound healing.

LEADING ADVANCES IN...

# MEDICAL DEVICES AND DIAGNOSTICS

**There is outstanding capability in the medical devices and diagnostics sector in Oxfordshire. This provides excellent opportunities for investors to access the necessary skill and research base available and is reflected in the number of medical device companies with operations across a range of R&D, sales and service, and manufacturing activities.**

Diagnostic imaging has a considerable presence in the area. Siemens, the leading global engineering and technology services company has a key manufacturing base in Eynsham, where it designs and manufactures the superconducting magnets for all Siemens magnetic resonance imaging (MRI) scanners worldwide.

Owen Mumford specialises in self-injection and blood sampling devices. Headquartered in Woodstock and employing over 500 people, the company exports over 90% of its products. Other companies manufacturing in the region include Ability Technology Group and Penlon, a medical device company which develops, manufactures and exports anaesthesia and other medical products to over 90 countries and was acquired by Indian medical equipment manufacturer BPL Medical Technologies in 2015. .

Abbott Diabetes Care, part of US owned medical company Abbott, has its Global Centre of Excellence for Medical Devices in Witney, where over 600 people are employed.

Oxford Nanopore Technologies, headquartered in Oxford Science Park with global operations in China and the USA, is developing portable devices for real-time molecular analysis and has launched a mobile phone-sized DNA sequencer – the MinION. Oxford Nanopore worked with a number of public health laboratories, in China and elsewhere, to support the rapid sequencing of the novel coronavirus (COVID-19).


*Abbott Diabetes Care FreeStyle Libre reader & sensor*

Intuitive Surgical, a global pioneer of robotic-assisted surgery has UK headquarters at Oxford Science Park providing educational and training programmes on minimally invasive care.

Adaptix, based at Begbroke Science Park and Harwell Campus, is developing the next generation of 3D X-ray imaging. They are aiming to reduce the cost of introducing the technology, increasing adoption across the world and improving portability.

Oxfordshire has considerable capability in the field of complex sensor technology with companies including Bartington Instruments which along with other markets, serves the medical sector with its measuring instruments used to monitor magnetic fields surrounding sensitive instrumentation used in medical equipment.

*Image courtesy of Oxford Nanopore*

LEADING ADVANCES IN...

# ARTIFICIAL INTELLIGENCE

**Oxfordshire is a global driver of Artificial Intelligence research, driving innovation in drug discovery, diagnostics and precision medicine.**

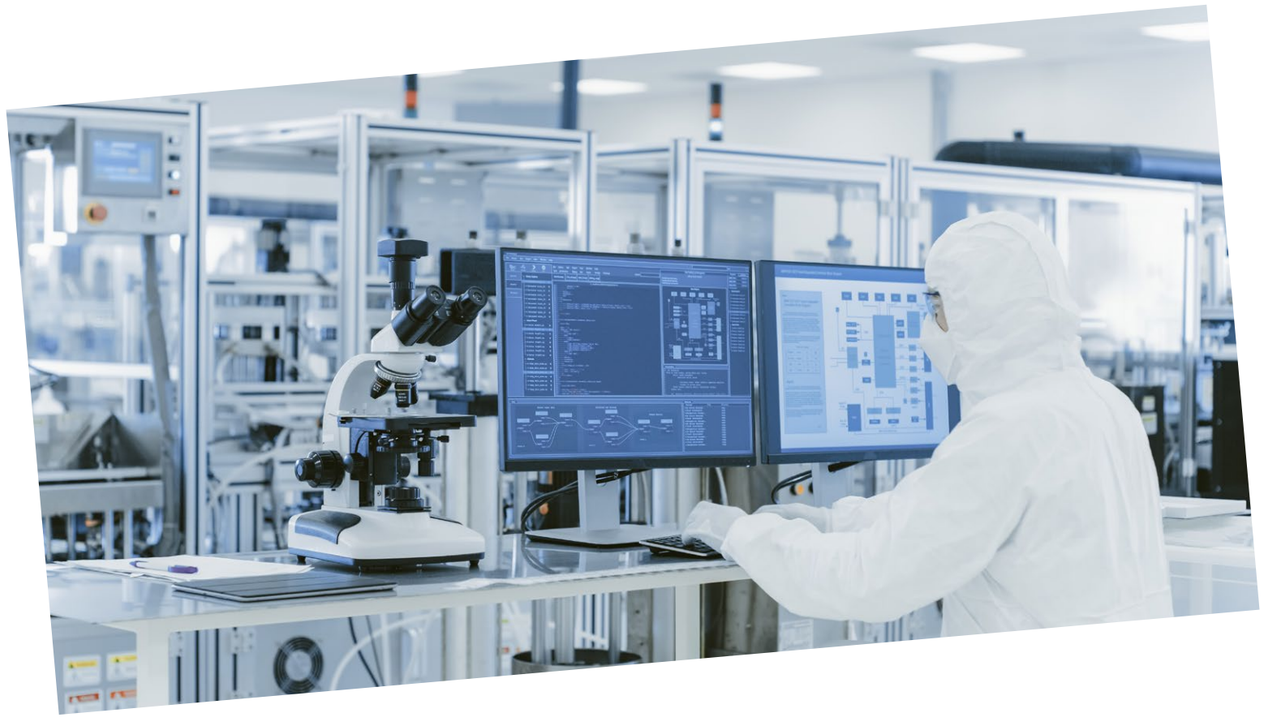
Innovate UK and industry are investing more than £17.5 million in developing Artificial Intelligence (AI) healthcare applications with the University of Oxford[1]. Led from Oxford's Big Data Institute, the National Consortium of Intelligent Medical Imaging (NCIMI) is funded by the UK Government's Industrial Strategy Challenge Fund to drive innovation in the use of artificial intelligence for improved diagnosis and delivery of precision treatments for cancer, heart disease, genetic disorders and other conditions. NCIMI aims to build a pipeline for innovation to allow new clinical imaging AI tools to be developed.

AI companies that have successfully spun out from Oxford University focused on healthcare include Brainomix, Caristo Diagnostics, Mirada Medical, Optellum, Perspectum Diagnostics and Plexalis.

Ultromics, another Oxford University spin out, has developed a unique AI-based ultrasonic diagnostic support solution for coronary artery disease. With support from Oxford Sciences Innovation (OSI), the company has raised £10 million in funding and its AI platform is now being trialled in 20 NHS hospitals.

In 2019, Sensyne Health announced a 3 year collaboration with the Big Data Institute to establish a world-leading research alliance to develop and evaluate the use of clinical artificial intelligence and digital technology to understand the complexities of chronic disease.

The newly established Rosalind Franklin Institute centred at Harwell Campus will pioneer disruptive technologies including AI and robotics to accelerate drug discovery and develop new diagnostics. The centre will be the base for the world's first automated discovery facility to produce drugs up to ten times faster transforming the UK's pharmaceutical industry.



In December 2019, Arctoris opened its new global headquarters and state-of-the-art research and development facility at Milton Park. Originating form Oxford University in 2016. Arctoris has established the world's first fully automated, robotic laboratory dedicated to accelerating drug discovery and generating datasets for AI modelling.

Oxford-based firm Exscientia, that uses AI to develop new medicines, announced in March 2020 it is working with the UK's national synchrotron facility, Diamond Light Source, to screen more than 15,000 drugs for their effectiveness as a treatment for Covid-19.

LEADING ADVANCES IN...

# DIGITAL HEALTH

Digital technologies can transform healthcare, from prevention through diagnosis and intervention, to ongoing monitoring. The UK market for digital health is expected to grow to £4 billion by 2022, driven primarily by high growth in cloud-based services and delivery models.

Oxfordshire's digital health space is supported by a number of networks including Digital Oxford, and specifically Digital Health Oxford.

TheHill is a digital health innovation community working in Oxford with NHS Trusts, universities, digital developers, innovators and investors to catalyse commercial and impactful technological solutions in healthcare. Their in-house team provides a bespoke programme of support interventions for SME's developing a healthcare innovation with a digital component.

Smart Oxford and two centres under the NHS Healthy New Towns initiative - Bicester and Oxford (Barton) are test beds for the use of smart technologies and the built environment, with the aim to engender Digital Health in Oxfordshire.

Cognitant has developed methods of displaying visual and interactive health information in 3D for patients to view on their own smartphones, tablets, computers or using virtual reality headsets. This enables health practitioners to convey complex information clearly and effectively through visuals.

Over 9,000 students are enrolled at the University of Oxford in courses that are of direct relevance to digital health and the Nuffield Department of Primary Care Health Sciences has research teams investigating and evaluating the effectiveness of digital tools.

**Oxfordshire and its hinterland has over 160 digital health companies and 430 stakeholder organisations[2] across industry, academia, the National Health Service (NHS) and the third sector. Our region is a potential major growth cluster for developing and demonstrating high income, technology-based healthcare solutions.**

[1] http://www.ox.ac.uk/news/2018-11-06-oxford-secures-%C2%A3175-million-lead-national-ai-healthcare-programmes

[2] Oxfordshire Science and Innovation Audit 2017

# ACCESSING OPPORTUNITIES TO COLLABORATE WITH THE NHS

Oxford University Hospitals NHS Foundation Trust is a world renowned centre of clinical excellence and one of the largest NHS teaching trusts in the UK. The Trust is made up of four hospitals - John Radcliffe Hospital, the Churchill Hospital and the Nuffield Orthopaedic Centre, all located in Oxford, and the Horton General Hospital in Banbury.

Oxford University Hospitals is open to collaborating with industry on research projects which aim to improve patient care. The partnership between Oxford University Hospitals and the University of Oxford allows industry-led commercial trials to be undertaken with the input of clinicians, academics, patients. Through the streamlined services provided within the Joint Research Office, companies can access world leading facilities, resources and expertise.

The Oxford Health NHS Foundation Trust manages community hospitals and clinics across Oxfordshire, Wiltshire, Buckinghamshire and North East Somerset, serving a population of approximately 2.5 million people. The Trust's R&D department runs on average 100 research studies at one time including highly complex clinical trials. The NIHR Biomedical Research Centre is a partnership between Oxford Health NHS Foundation Trust and the University of Oxford and is committed to translating innovative research into better treatments for mental health disorders and dementia.

A key source of business support for companies wishing to access research and clinical expertise is the Oxford AHSN, one of 15 Academic Health Science Networks covering the country. It covers a population of 3.3 million and is a partnership bringing together universities, industry and the NHS.

Led by teams of specialist clinicians, Oxford AHSN is recognised as a leader in its field and can effectively help companies set up in the area and build connections between the NHS, research and business to enable companies to get their product to market more quickly and effectively.

Oxford AHSN can help develop businesses develop links with key NHS and research assets in the county.

The University of Oxford led two national platform trials for the treatment of Covid-19, including RECOVERY, the world's largest clinical trial of treatments for hospitalised patients, and PRINCIPLE, the first clinical trial of Covid-19 patients in primary care to prevent hospitalisation.

For more detail on novel therapies, diagnostics and treatments developed by Oxfordshire companies for Covid-19, see Oxfordshire's Response to Covid-19

**Oxford Biomedica, formed in 1995, is one of the University of Oxford's notable spin-outs.**

A specialist in the development and commercialisation of innovative gene-based medicines, it employs more than 430 and had developed a series of international partnerships, including with Novartis, Axovant Gene Therapies, Microsoft and Boehringer Ingelheim. Since October 2020 it has been manufacturing the Astra Zeneca Covid-19 vaccine at its OxBox site.

# FORGING PARTNERSHIPS BETWEEN INDUSTRY AND ACADEMIA

Oxford University Innovation is a technology transfer and consultancy company created to manage the research and development of Oxford University's spin-offs. OUI offers investors the opportunity to invest in new companies and has created over 100 spin-outs to date. The Consulting Services team provides businesses access to over 5,000 academic and research staff and the state of the art testing and analysis facilities that underpin Oxford's world class research.

Oxford Sciences Innovation (OSI), a £600m investment fund, is the largest for spin-outs in Europe. OSI provides capital and scaling expertise to businesses driven by intellectual property developed in Oxford University's Mathematical, Physical, Life Sciences Division and Medical Sciences Division, with a core ambition to bring the very best of the University's scientific research to the market.

LAB282 is a ground breaking £13m collaboration between Oxford University, the global drug discovery company Evotec, and Oxford Sciences Innovation. The partnership provides industrial expertise and funding to help translate innovative, world class, biomedical discoveries at Oxford University into next generation drug discovery programmes that can be commercialised for patient benefit.

Oxford Investment Opportunity Network (OION) is a business angels network for investors and private companies interested in investing in spinout companies from the University of Oxford. Members receive business proposals from spinouts looking for funding and invitations to events where private individuals and companies can meet, discuss and invest in the early stages of a Oxford University spinout company.

Oxford University's Industrial Partnerships Team and Medical Sciences Business Development Team work together to establish, build and support strong research collaborations between industry partners and academia.

Oxford Brookes' Faculty of Health and Life Sciences welcomes businesses as researcher collaborators and access to specialist services through its Innovation and Knowledge Exchange. The Bioinnovation Hub offers facilities and resources for startup biotech companies.

# OUR INNOVATION POWERHOUSES...

## OLD ROAD CAMPUS

**The University of Oxford's Old Road Campus is home to much of the institution's world-leading clinical medical research and is close to Oxford's hospitals. The campus provides a powerful mix of state-of-the-art research, innovative start-ups and pharma.**

The Old Road Campus is home to the Churchill Hospital including its £100m cancer hospital, The Wellcome Trust Centre for Human Genetics, the Richard Doll Building (housing epidemiological studies and clinical trials services), the Nuffield Department of Medicine Research Building, the Oxford Bioescalator, Target Discovery Institute and Big Data Institute.

The University's Old Road Campus Research Building (ORCRB) facilitates collaboration between renowned specialists in cancer and is at the heart of the University of Oxford's world-leading biomedical research. The University's long-standing partnership with local hospitals enables the close integration of science and medical care.


In addition to the Ludwig Institute for Cancer Research, units within the ORCRB include:

- Structural Genomics Consortium
- Department of Oncology
- Jenner Institute
- Institute for Biomedical Engineering

The campus also has close links and convenient access to Oxford's science area, the Weatherall Institute for Molecular Medicine and the John Radcliffe Hospital.

## OXFORD BIOESCALATOR

**The BioEscalator provides lab space and support for early-stage high-potential medical science companies emerging from the University's medical research groups and other start-ups attracted by the proximity to world-leading researchers and facilities.**

Located on  University of Oxford's Old Road Campus, the BioEscalator is funded by the Government's City Deal and the University of Oxford, and shares the Innovation Building with Novo Nordisk's Research Centre Oxford .

It offers dedicated labs for start-ups with shared facilities, knowledgeable staff and a burgeoning entrepreneurial community. Designed for small and growing medical science businesses, it places an emphasis on flexibility and support - entrepreneurs can start with just one lab bench in a shared lab and move to a private lab as they grow. It is also a hub for entrepreneurial biosciences through organising and hosting events aimed at increasing the collaboration between researchers at the university, companies of all sizes and the wider innovation ecosystem.

The facility opened its doors in September 2018 and filled quickly with rapidly-growing tenants, who have already attracted £43.2M investment since they moved in, with further rounds of funding planned by all companies. There are currently 13 companies in residence, employing 75 people, the majority of whom are scientists. The companies' science is tackling a wide range of diseases through the development of novel diagnostics, therapeutics and platform technologies. Nearly one third of the CEOs are women.

Building on the success of the BioEscalator, the University of Oxford's Medical Sciences Division is now starting to plan a second, larger facility to support additional start-ups over a longer period of growth.

## HEALTHTEC AT HARWELL

**Harwell Campus brings together UK's strengths in the physical sciences, engineering and life sciences, industry, academia and Government, to create a truly cross disciplinary and collaborative environment.**

Businesses can leverage the Harwell Campus ecosystem, including a comprehensive suite of open access facilities, including X-ray and Electron Microscopy imaging at the Diamond Light Source, novel fluorescence imaging at Central Laser Facility and 'super microscopes' ISIS Neutron and Muon Source.

The 300 hectare science, innovation and business campus boasts Grade A office and laboratory spaces from 300 to 20,000 sq ft are available in comprehensively remodelled buildings, complemented by first class amenities, including nurseries, sports facilities and attractive public spaces.

Harwell is already home to a thriving cluster of innovative companies across a broad spectrum of emerging pharmaceutical/biotech, medtech, diagnostic, digital health, as well as organisations that research and inform on public health.

Harwell is host to the UK's world-leading national physical sciences laboratories representing an investment of over £2 billion to date.

Recent developments include the Rosalind Franklin Institute, Agilent Spectroscopy Site, Nucleic Acid Therapies Accelerator (NATA), Extreme Photonics Applications Centre (EPAC) and the Vaccine Manufacturing Innovation Centre.



## OVER 25,000 PEOPLE IN LIFE SCIENCES AND HEALTHCARE

Employees in these sectors represent 5.6% of the population[1].

# A SKILLED AND EXPERIENCED WORKFORCE

**Investing in Oxford brings with it access to a wide pool of skilled employees, including the products of Oxfordshire's higher and further education institutions:**

The Medical Sciences Division at the University of Oxford is an internationally recognised centre of excellence for biomedical and clinical research and consists of over 5,600 academics, researchers, clinicians , general practitioners and administrative staff, 1,600 graduates and 1,700 undergraduate students.

Oxford Brookes University runs foundation and degree courses including in Biomedical Science, Medical Science and Life Sciences Foundation as well as postgraduate courses in Medical Genetics and Genomics.

Abingdon and Witney Further Education College offers a Life Sciences Foundation degree and a Medical Sciences extended Diploma.

UTC Oxfordshire (ages 14-19) has specialisms in science, including life sciences and engineering. Its industry partners include Vertex and OBN.

Potential investors can access further labour market reports and insights and explore their specific skill requirements by contacting the OxLEP Inward Investment team.

[1] Business Register and Employment Survey 2018, ONS

Bushra Nawaz is completing a Level 3 BTEC in Applied Science apprenticeship with the BioEscalator, part of the University of Oxford. Her two year apprenticeship concluded in July 2020.

## NURTURING THE SCIENTISTS OF THE FUTURE

"I've always been a very hands-on person so the opportunity for a practical form of learning whilst in the workplace was something that naturally appealed to me when considering my post A-Level options.  Being paid to "earn while you learn" was also a big draw compared to all of the costs associated with attending university.

"Too many people have this idea that you need to go to university to succeed and some of my friends were initially sceptical of my choice to pursue an apprenticeship. However, now they've seen what I've been doing they appreciate that there is more than one route for young people. The sheer amount of frontline exposure that I've managed to get is something that you would really struggle to get in a university environment and all too often you hear of people struggling to find jobs post-degree because they lack relevant accompanying experience. Once I've finished my apprenticeship I'd like to explore degree options in Biomedical Science to continue my development.

"One of the best things has been being able to observe and participate in science in a real applied environment. For example, I've been working with Hutano Diagnostics, a startup based at the BioEscalator that is developing a rapid diagnostic for the Ebola virus. Alongside other members of their team I helped complete crucial foundational work in the lab to help them complete initial studies that will form the basis for further research.

"I think apprenticeships also offer lots to employers. They can take someone straight out of school and mould them so that they have the skills and attitudes that fit neatly within their organisation. More companies working in science need to explore their potential – there were very few opportunities on offer when I was applying for an apprenticeship.

"It has been amazing working alongside so many specialists from a diverse range of backgrounds – everyone has forged their own path to success. I'm so lucky to be in a STEM workplace, learning alongside some fantastic female role models – they're always encouraging me and its great to see the variety of ways my career could develop in the future."

Credit A2Dominion

# A VIBRANT AND DIVERSE PLACE TO LIVE

## 10 REASONS TO LIVE IN OXFORDSHIRE

**Communities steeped in history:** The UNESCO World Heritage site at Blenheim Palace, Oxford's dreaming spires, and Banbury Cross of nursery rhyme fame are just a few of the landmarks dotted around the county.

**Beautiful outdoor spaces:** Many towns and villages sit within the Cotswolds, North Wessex Downs and Chilterns Areas of Outstanding Natural Beauty, and rivers and canals add to the landscape and host water-based activities.

**Supremely well connected:** The city of Oxford is an hour's drive from London and 45 minutes from London Heathrow, the UK's largest airport. Trains run frequently from Oxford's two mainline stations, linking it to London in less than an hour as well as to Birmingham, and the north and the south coast.

**A fusion of traditional and modern living:** The historic streets of Oxford and thatched cottages in rural hamlets don't mean you have to live in the past - 97% of properties benefit from fibre broadband.

**Museums and culture:** A wide range of museums, galleries and theatres means you are never short of cultural opportunities to explore, including the Ashmolean Museum in Oxford and several National Trust properties.

**Retail therapy:** The new Westgate Oxford shopping centre and Bicester Village offer a wide range of global brands alongside exceptional dining and leisure facilities. Small independent traders can be found on many high streets, offering boutique products manufactured locally and from further afield.

**Excellent educational opportunities:** In addition to the two universities, there are many fantastic schools in the state and private sector, ensuring choice for all.

**Safe and welcoming communities:** Newcomers are welcomed by communities with many people willing to offer help and advice, and the county also benefits from low levels of crime.

**Literary, TV and film connections:** Home to filming locations for productions including; Inspector Morse, Harry Potter, His Dark Materials and Downton Abbey. The annual Oxford Literary Festival celebrates world-class writers in the city of Lewis Carroll, CS Lewis, JRR Tolkien and Phillip Pullman.

**Gastronomical delights:** From high end cuisine offered by Michelin starred restaurants to a pint of locally brewed Hooky Ale poured in the village pub, there is no shortage of places to eat and drink.

# COMPREHENSIVE SUPPORT FOR INVESTORS

## SUPPORT FOR BUSINESSES INVESTING IN OXFORDSHIRE

We provide comprehensive tailored assistance to help companies from across the world establish their new operation in the area.

Our Inward Investment team offers a range of support including:

- Identifying commercial premises and co-ordinating property viewings
- Facilitating introductions to the University of Oxford and Oxford Brookes University
- Making introductions to Oxfordshire's science and research facilities
- Connecting businesses with professional service providers, business support organisations and sector specific networks.
- Offering assistance with graduate recruitment and training support including apprenticeships
- Supporting the relocation of employees and their families
- Providing ongoing support to Oxfordshire-based companies

**The top two UK life sciences companies by total funding received are Oxford Nanopore (£650m) and Immunocore (£281m)**

# CASE STUDIES

## NOVO NORDISK RESEARCH CENTRE OXFORD

### Delivered in collaboration with the University of Oxford

Novo Nordisk Research Centre Oxford (NNRCO) is one of the company's four transformational research units. The target discovery and translational research unit is focused on identifying innovative therapies for patients with type 2 diabetes and cardiometabolic diseases.

The project brings together Novo Nordisk's 90 years' experience in developing treatments for diabetes with the research expertise of the University of Oxford. Up to 100 researchers employed at the centre will combine industrial and academic knowledge to develop the next generation of type 2 diabetes treatments.

The Novo Nordisk – Oxford Fellowship Programme operates in partnership with the University of Oxford, supporting the development of the next generation of diabetes and metabolism researchers and advancing scientific excellence within diabetes and cardiometabolic diseases.

Oxfordshire was chosen as the location for this facility due to the existing life science ecosystem and the collaborative opportunities with the University of Oxford.

**A new £115m global research centre in Oxford**

## INTUITIVE SURGICAL

### A new UK headquarters for robotic-assisted surgery pioneer

Intuitive Surgical's new facility provides educational and training programmes alongside showcasing the companies range of products and services.

The global leader in minimally invasive care and the pioneer of robotic-assisted surgery chose Oxford Science Park to take advantage of existing ecosystems, allowing the company to collaborate with international experts in engineering, science and clinical environments.

Over the past 18 months Intuitive has doubled their personnel and is expected to grow further following ever wider adoption of their innovation systems.

OxLEP, working alongside the Department for International Trade, assisted Intuitive Surgical with their relocation, initially providing background information and then facilitating visits to several sites. Introductions to related companies were also organised to ease Intuitive Surgical's integration into the existing local ecosystem.

**Opened in September 2019**

## AGILENT

### A state-of-the-art facility in Oxfordshire for spectroscopy

Agilent is a global leader in life sciences, diagnostics and applied chemical markets. They supply laboratories with instruments, services, consumables and applications.

In October 2019, Agilent opened its new spectroscopy research and development hub at Harwell Innovation Campus in Oxfordshire. The site is focused on molecular analysis through laser spectroscopy and accommodates the company's Laser Spectroscopy Centre of Excellence.

The new facility incorporates Agilent's Raman Spectroscopy business, known as Cobalt Light Systems prior to their acquisition in 2017. Cobalt Light Systems began as a 2008 spin-out from the UK Science and Technology Facilities Council.

In their announcement of the new facility, Phil Binns, vice president, and general manager of Agilent's Spectroscopy division explained why they chose Harwell Campus in Oxfordshire - "Our new flagship site will enable us to develop a truly unified approach to vibrational spectroscopy. The location will also facilitate greater collaboration with internationally acclaimed academic and scientific thought leaders based at this premier UK hub of scientific innovation."

**Opened in September 2019**

## VERTEX PHARMACEUTICALS

### Discovering transformative medicines to help people with serious diseases

Vertex is a global biotechnology company that has been committed to furthering scientific innovation in the UK since 1998. Vertex invests in scientific innovation to create transformative medicines for people with serious diseases. It discovered and developed the first medicines to treat the underlying cause of cystic fibrosis (CF), a rare, life-threatening genetic disease, and has several ongoing clinical and research programs in CF. In addition to clinical development programs, Vertex has more than a dozen ongoing research programmes focused on the underlying mechanisms of other serious diseases.

Founded in 1989 in Cambridge, USA, it now employs approximately 3,500 people in the United States, Europe, Canada, Australia and Latin America, with nearly two-thirds of its staff dedicated to research and development.

Its international headquarters are in Paddington, London, and expert multi disciplinary scientists have been based at its UK research site in Oxford since 1998. Through the research site, Vertex has established a network of innovation collaborations with a number of academic and scientific institutions.

**Opened in 1998**

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Oxfordshire Local Enterprise Partnership

European Union
European Regional
Development Fund

HM Government