UK Genomics Spotlight: Leading Innovations

2022

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ABHI

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BIA
UK BioIndustry Association

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Joint Foreword

by UK Minister of Export and DIT Director of Healthcare, Life Sciences and Chemicals

Mike Freer MP
Minister of Exports

Dr Aphrodite Spanou
Director, Healthcare, Life Sciences & Chemicals Directorate

The value and importance of Genomics in healthcare have been brought into sharp focus by the Covid 19 pandemic. In the UK, strong partnerships between industry, NHS and government have enabled us to rapidly apply our Genomics capacity to respond to this challenge. Building on this capacity will present an opportunity to provide resilience against future disease outbreaks.

Following on from the success of the world-renowned 100,000 Genomes Project – led by Genomics England in partnership with NHS England and Improvement - the UK's continued investment and leadership in Genomics has helped establish its position as one of the most advanced genomic centric healthcare systems in the world today.

The UK's world-leading Wellcome Sanger Institute has led the world in sequencing the SARS-CoV-2 virus. The strength of the genomics science base and diagnostics sequencing industry has enabled the UK to rapidly identify COVID-19 variants. It has additionally captured critical data, enabling the UK to track mutations in the genome of the virus.

The growth in precision medicine and importance of genomic technologies, along with a focus on preventative medicine and early detection of disease, has promoted extensive innovation. This shows the strength of UK industry, and we are delighted to invite you to explore *The UK Genomics Playbook – World leading innovations offer.*

Foreword

by CEO of BioIndustry Association (BIA)

Steve Bates
CEO, BIA

The UK's strength in genomics has never been more evident than during the COVID-19 pandemic, where we have been responsible for sequencing more SARS-CoV-2 genomes than any other country. Beneath the high-profile headlines, however, there is a hive of activity in Britain developing innovations that extend far beyond COVID-19 and promise to change healthcare as we know it around the world.

These innovations are driven by the UK's rapidly growing genomics ecosystem: start-ups and scaling companies; active investors; world-leading academics; a strong skills base; unique data resources; leading research institutes; and the NHS, all joined together by their mission to improve patients' lives. From preventing disease through early diagnosis to offering hope to patients with rare diseases, genomics is now the foundation underpinning modern medicine.

The UK genomics ecosystem builds on our long legacy in genomic research, and is in a unique position to leverage these capabilities going forwards, with strategic national public and private investments. From UK Biobank and Genomics England through to the NHS Genomics Medicine Service, this is an exciting time for UK health innovation. The UK is fast delivering the potential of genomics technologies and we are looking to partner globally.

Foreword

By Managing Director, Diagnostics, Association British HealthTech Industries (ABHI)

Nishan Sunthares
Managing Director, Diagnostics, ABHI

The United Kingdom's leadership in genomics is recognised globally, from the completion of the 100,000 Genome Project to COVID-19 surveillance through virus sequencing. A combination of the NHS, a strong science base, a thriving life sciences industry, private and public funding, genomics research capabilities and national institutions has allowed the UK to harness the potential of genomics to transform healthcare.

The Genome UK Strategy sets out an ambition for the UK to be the world's most advanced genomic healthcare ecosystem. This presents opportunities to accelerate research, develop innovations in new technologies and data science, and to apply genomics in the clinical setting to diagnose disease at an earlier stage and also predict and prevent diseases before they might appear.

This is a hugely exciting prospect and strongly aligned with ABHI's own vision to make health technologies accessible to all who need them when they are needed, allowing disease to be detected and treated earlier. The UK is in a fantastic position to continue to lead this revolution in science, technology and healthcare delivery.

About us and our Partners

DIT

The UK's Department for International Trade (DIT) has overall responsibility for promoting UK trade across the world and attracting foreign investment to our economy. We are a specialised government body with responsibility for negotiating international trade policy, supporting business, as well as delivering an outward-looking trade diplomacy strategy.

BIA

The BioIndustry Association (BIA) is the trade association for innovative life sciences in the UK. We promote an ecosystem that enables innovative life science companies to start and grow successfully and sustainably, and we do this through Influence, Connect, Save. The BIA Business Solutions Scheme provides significant savings that are helping members to grow more cost-effectively.

ABHI

The Association British HealthTech Industries (ABHI) is the UK's leading industry association for health technology. We represent the industry to stakeholders, such as the government, NHS and regulators. ABHI's 330 members account for approximately 80% of the sector by value.

Genomics England

Genomics England is a British company that was set up and owned by the UK Department of Health and Social care. It began as a vessel to execute the UK Government's 100,000 genomes project, achieved in 2018. They now aim to help everyone benefit from genomic healthcare by continually refining, scaling and evolving their ability to enable others to deliver genomic healthcare and conduct genomic research.

NHS England and NHS Improvement

The role of NHS England and NHS Improvement is to enable the NHS to harness the power of genomic technology and science to improve the health of our population and deliver on the commitments in the **NHS Long Term Plan**. These commitments will be delivered by the NHS Genomic Medicine Service for England.

The objective of this document is to provide an overview of the UK's Genomics ecosystem and what the UK can offer for export in the Genomics sector. The offer includes illustrative examples of UK suppliers capable of exporting and the company profiles and cases showcased in this offer are just a small selection of what the UK can offer. DIT can help identify suppliers that can fit your specific need, please get in touch to receive more information. For all enquiries, or for an introduction to one of the companies, or for any other information:

Please contact us at lifescience@trade.gov.uk or find out more at https://eu.eventscloud.com/website/6238/life-sciences

Key Summary

Genomics has played an expanding role in the NHS over the last seven decade. The UK's core strengths in genomics is underpinned through its life sciences heritage and strong foundations. The time is now to focus on its future where the UK is pushing the boundaries of discovery.

Core Strengths:

1. Longstanding leadership in Genomics research as a pioneer with a peerless heritage following elucidation of the DNA double-helix structure to the significant national contribution to the Human Genome Mapping Project and more recently the 100,000 Genome Project. The UK is well placed globally to capitalise on these initiatives.

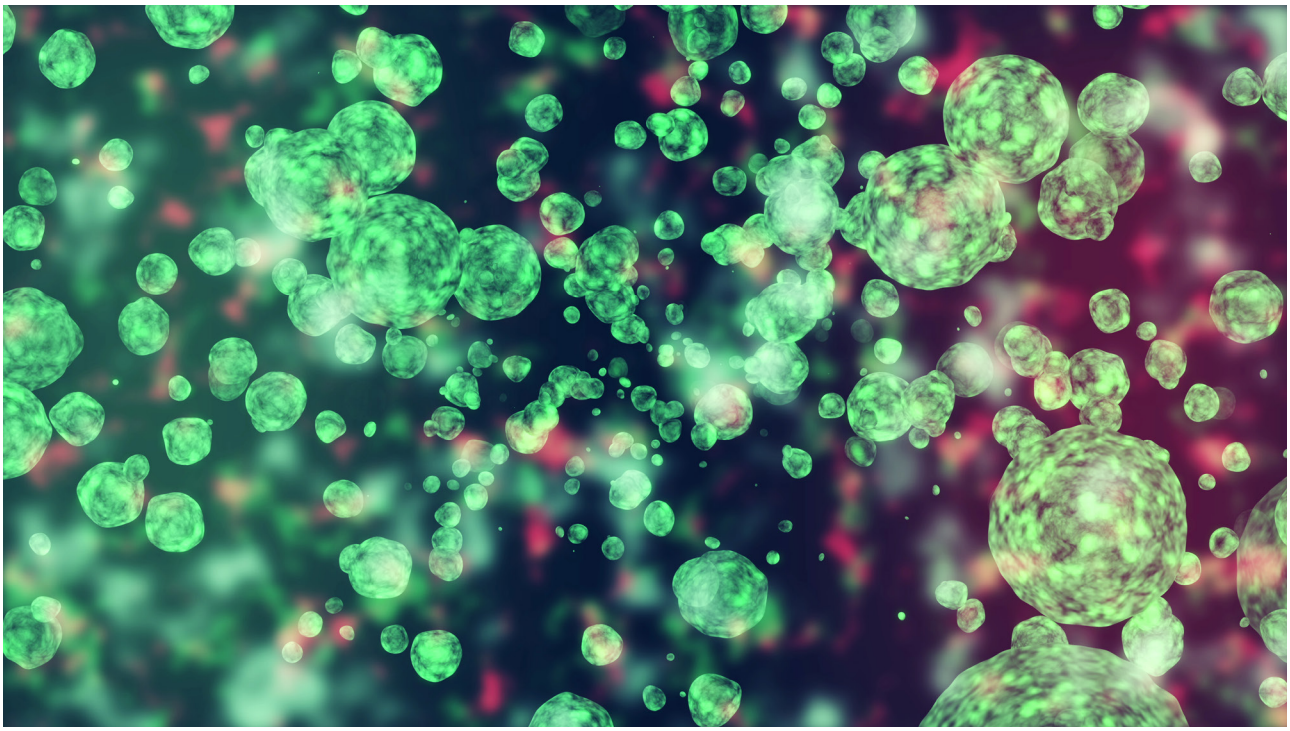
2. Genomic revolution led by government, supported by industry, academia, health service and charities. With a partnership working approach between sector and government to deliver the Next Generation of life-changing treatments and technologies.

3. At the cutting-edge of Genomic healthcare, informatics tools and precision medicine evidenced by the Genomic surveillance of the SARS-CoV-2 virus, by world leading Wellcome Sanger Institute.

4. Enabling progress through safe and secure access to patient health and Genomic data.

5. UK's excellence is underpinned by a highly skilled Genomics and informatics workforce.

6. With a National Health Service (NHS), serving a population of 66+ million people, seeks the best innovations and solutions from around the world.



Genomics: The Future for Global Health

Genomics is rapidly changing the future of medicine and has already had great impact and an amazing power to continue improving health outcomes globally. It provides an incredible opportunity to achieve faster, accurate diagnosis, and has driven a revolutionary shift toward precision and personalised medicine, meaning better, more targeted treatments for patients with diseases such as cancer, obesity, and cardiovascular disease.

Today major technological advances are helping to accelerate the time it takes to read, analyse, and understand genes, allowing us to discover new personalised medicines and therapies even faster. Combined with an exponential decline in sequencing costs, more clinically relevant sequencing timescales and large-scale public and pharmaceutical investment, genomics is dramatically altering the future of medicine, and at a level not previously possible.

Knowledge of an individual's make-up can help understand their pre-disposition toward certain genetic diseases, inform the best course of treatment and inform development of precision medicine.

"

The role of human genomics research and related biotechnologies has the potential to achieve a number of public health goals, such as to reduce global health inequalities by providing developing countries with efficient, cost-effective and robust means of preventing, diagnosing and treating major diseases that burden their populations. **World Health Organisation (WHO)**

The global genomics market size is expected to reach USD 62.9 billion by 2028, according to a new report by Grand View Research, Inc.
It is expected to expand at a CAGR of 15.35% from 2021 to 2028.

Why choose the UK

The UK has long been a world leader in Genomics and welcomes you to be part of our export story. From the discovery of the structure of DNA almost 70 years ago, through our contribution to the Global Human Genome Project, to the delivery of the 100,000 Genomes Project in 2018, the UK remains at the forefront of genomics research. Today it continues to harness, the power of Genomic medicine and Science to improve health with the UK government actively investing in the UK's Genomics capabilities to bolster its position as a Life Science Superpower.

Why Choose the UK

- Access to Big Data
- More Patient Capital
- Government has funded the sector
- PPP approaches

The UK has an existing vibrant genomics sector, working with world leading institutions in Genomics including Biobank, Sanger, Genomics England. The UK government, Welsh and Scottish Governments and Northern Ireland Assembly have agreed a series of commitments to improve outcomes for patients through better genomic testing and access to clinical trials. As an established sector, there are industry networks and a vast talent pool with an ability to work with a world class science base and business environment.

With an advanced genomics sector that has benefited from sustained government funding and opportunities to work with world leading genomics efforts with organisations such as UK Biobank, Wellcome Sangar Institute (WKSI) and Genomics England (GEL). UK solutions have been developed and tested in an expert environment.

Where UK export can benefit you:

- Tap into world-class science and a growing pool of talent, with leading global universities, expert research and data infrastructure, and nearly 250,000 people in industry.
- Work with an engaged research, implementation and evidence partner operating at scale in the National Health Service (NHS) serving a population of 66+ million people, with world-first programmes to integrate genomics, AI, early diagnosis, and preventative population medicine.
- Benefit from partnership and vision across the sector in the UK's comprehensive innovation ecosystem, with a long and productive track record of collaborative working between industry and government alongside academia, charities, and the NHS.

To Find out more about UK Genomics and examples of our health system, download our 2022 report **"World Leading Genomics and Personalised Medicine in the UK".**

The UK: A Global Leader in Genomics

The UK has built an end-to-end ecosystem that harnesses the power of genomic medicine and science to improve health care, benefiting patients and wider innovation.

The UK is a recognised Global Leader in Genomics. From seminal discoveries in fundamental science to translation into clinical practice, and improved patient outcomes, the UK has made a vast contribution to this rapidly evolving and exciting field.

The UK genomics sector is at the forefront of these technologies and its growth is driven by a thriving community of entrepreneurs, scaling SMEs, global companies, and an active investor base. The sector is supported by academic excellence at scale, research institutes, the NHS, government support, and unique data resources such as the UK Biobank and Genomics England.

We are committed to a future where genomics greatly improves the mental and physical wellbeing of the UK population and millions more worldwide. This translates to developing a better understanding of the genetic causes of disease, along with provision of tailored therapies, meaning patients get the treatments and advice that work for them. Predictive interventions and addressing diseases before they appear, are also starting to deliver on the promise of preventative medicine at scale.

This document shares some of the companies and organisations at the heart of the UK genomics industry, and how their work is changing patient care and health outcomes around the globe.

"The UK Government has a national genomic strategy – Genome UK. This 10 year strategy aims to align world-leading NHS and Research programmes to maximise the benefits for healthcare by placing patients at the heart of all we do. The UK collaborates worldwide with national and regional genomic programmes using our world-leading assets that include: Transforming Healthcare, transforming prevention, transforming research through Biobank UK (500,000 people) and the NIHR BioResource (200,000-400,000) created unique research cohorts with rich clinical characterisation and Transforming technology. The UK is exploring the role of multiomics in understanding disease susceptibility and creating Trusted Research Environments to store these data with open access to the global community."
Professor Sir Mark Caulfield, Vice Principal for Health, Professor of Clinical Pharmacology at Queen Mary University of London and CEO of Barts Life Sciences, former CSO for Genomics England

Statistics

100,000 Genomics England project which achieved its 100,000 sequenced genomes target in 2018.

1st country worldwide to apply whole genome sequencing at scale in direct healthcare.

154 UK genomics companies, employing over 5000 highly skilled people and with a market of over £5bn.

£1.2 billion raised by companies using genomics to develop therapeutics in private capital since 2011.

Aim to sequence **500,000** whole genomes as part of the NHS England Genomics Medicine Service.

Harnessing Genomics in the Pandemic

The UK is establishing new partnerships, to sequence human genomes in the fight against coronavirus. While the Covid 19 pandemic has indeed shone a spotlight on the UK's rapidly growing genomics industry, today worth over £5 billion and raising 34% of the wider UK life sciences sector's total investment, according to the Genomics Nation report. One of the key strengths of the UK is the vibrant and collaborative innovation ecosystem it has nurtured. The partnership between Genomics England, GenOMICC consortium, Illumina, and the NHS. Working with key partners across the genomics community, the Government's new Genome UK implementation plan, published in May 2021, further set out 27 commitments to deliver over the next year including 5 high-priority actions, such as identifying technologies that could be used to enable faster genomic testing for cancer; and delivering whole genome sequencing for patients with rare diseases and cancer as part of the NHS Genomic Medicine Service, making the NHS the only healthcare system worldwide to routinely offer this life-changing test for earlier diagnosis.

Genomics England is now expanding its impact. Their next chapter involves working with patients, doctors, and scientists to improve genomic testing in the NHS and help researchers access the health data and technology they need, to make new medical discoveries and create more effective, targeted medicines for everybody.
https://www.genomicsengland.co.uk

A major new human whole genome sequencing study. This study will take place across the NHS, involving up to 20,000 people currently or previously in an intensive care unit with coronavirus, as well as 15,000 individuals who have mild or moderate symptoms. **Genomics England** is partnering with the **GenOMICC consortium, Illumina** and the **NHS** to launch the research drive, which will reach patients in 170 intensive care units throughout the UK. The project is backed by £28 million from **Genomics England, UK Research and Innovation**, the Department of Health and Social Care and the **National Institute for Health Research. Illumina** will sequence all 35,000 genomes and share some of the cost via an in-kind contribution.

Rapid whole-genome sequencing of SARs-CoV-2. The **COG-UK Consortium** is an innovative partnership of NHS organisations, the four Public Health Agencies of the UK, the **Wellcome Sanger Institute** and more than 12 academic institutions providing sequencing and analysis capacity. It is supported by £20 million funding from the UK Department of Health and Social Care (DHSC), **UK Research and Innovation (UKRI)** and the **Wellcome Sanger Institute.**
www.cogconsortium.uk

New Variant Assessor Platform (NVAP). The NVAP was announced in January 2021 and is a non-commercial offer of UK genomics expertise delivered in-country or via the UK, to detect new variants of concern for SARS-CoV-2. Operational since April 2021, this programme is led by **UK Health Security Agency (UKHSA)** together with the UK Department for Health & Social Care (DHSC), Foreign, Commonwealth & Development Office (FCDO) the World Health Organization (WHO).
https://www.gov.uk/guidance/new-variant-assessment-platform

Integrated Genomics Services

Since the completion of the Human Genome Project, the UK is harnessing the expansion of molecular Genetics capabilities and aims to enhance UK research in Genomics to better serve the population, integrating Genomic medicine into routine NHS care by 2025.

UK Life Sciences Vision
The Vision focuses on what must be done to create the environment in which industry can grow and succeed in the UK, and patients and the NHS can receive a real benefit. The Vision strongly supports precision medicine, with healthcare missions including:

- Enabling early diagnosis and immune therapy for cancer
- Genomics at scale: genomic polygenomic risk scores

Genome UK: Future of Healthcare
The UK's National Genomic Healthcare Strategy aims to cement the UK's status as a global leader in genomics.
The strategy sets out a clear plan to provide world-leading, genomics-driven healthcare to patients in the UK.

Genome UK: 2021 to 2022 implementation plan
Set of commitments to build towards the vision.

Genomics England Ltd and NHS Genomic Medicine Service

Genomics England Ltd (GEL) is a key pillar of the Governments strategy.

Genomics England works with the NHS to bring forward the use of genomic healthcare and research to help people live longer, healthier lives. It was launched by the UK's Department of Health and Social Care in 2013 to deliver the 100,000 Genomes Project, a ground-breaking initiative to demonstrate how genomics can help with clinical insights, and to build a foundation for embedding genomics into mainstream healthcare in the NHS.

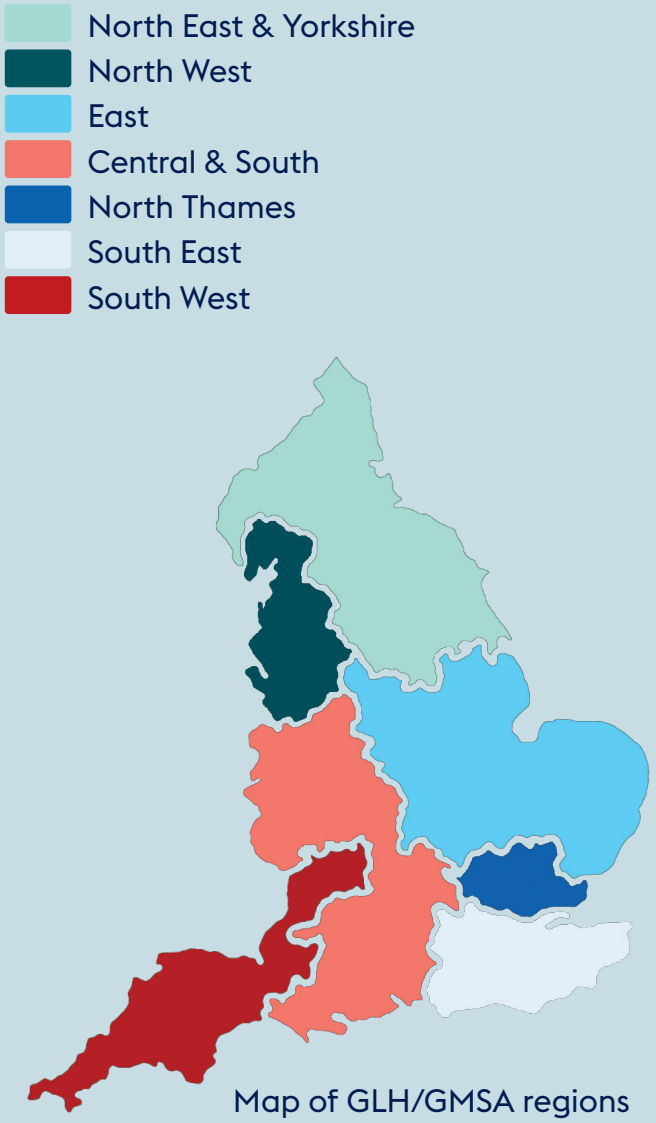
Genomics England is now expanding its impact. The next chapter involves supporting the NHS to improve whole genome sequencing testing in the NHS and help researchers access the health data and technology they need, to make new medical discoveries and create more effective, targeted medicines for everybody.

Seven NHS Genomic Laboratory Hubs (GLHs) working as a national network to provide equitable access to comprehensive genomic testing for all patients in the NHS in England. Full repertoire of Genomic testing outlined in the National Genomic Test Directory and covers inherited diseases, prenatal screening, cancer, neurological and lifestyle common diseases (e.g., diabetes, cardiovascular).

Aligned with the GLHs are seven **NHS Genomic Medicine Service Alliances (GMS Alliances);** to provide multidisciplinary clinical leadership to embed Genomics in end-to-end patient pathways. The NHS GMS Alliance support transformation at a national and local level.

Delivering:

- Education and training.
- Development of good laboratory practice.
- Support with IT and bio-informatics.
- Equitable access to Genomic testing Clinical protocols and opportunities for second opinions.
- Clinical oversight and governance.
- Access to clinical trials networks and support in developing R&D and clinical trials capabilities.



Map of GLH/GMSA regions

UK Genomics Sub-offers Our offer to you

Offer 1: Whole Genome Sequencing, Software, Bioinformatics and Consulting

Offer 2: Diagnostic Tests and Reagents

Offer 3: Training and Education

Offer 4: Clinical Genomics Services

Offer 5: Precision Therapeutics, Cell and Gene Therapy

Our proposal to you

Examine what we've done

Adopt what feels right for you

Collaborate with us

Offer 1

Whole Genome Sequencing, Software, Bioinformatics & Consulting

Next Generation Sequencing (NGS) technologies and genome sequencing technologies including array and exome-based sequencing, are rapidly increasing output, while reducing cost. Storage, access and analysis to the data generated are now the key challenges. The UK offers innovative and ground-breaking solutions to better understand and harness the information within DNA.

Complementary digital health companies are also highlighted in the **"DIT Digital health beyond 100 playbook"**

Offer 1: **Whole Genome Sequencing, Software & Bioinformatics**

Academic Health Solutions is a UK-based advisory enterprise with global reach. They offer consultancy on how to build academic health science networks, clinical service transformation that leverages advances in science and technology and associated work force strategies.
www.academichealthsolutions.com

Aridhia offers a health data science platform, the Digital Research Environment (DRE), which is designed to meet the domain needs of health and bio-medical research communities. The DRE consists of FAIR Data Services and Workspaces. FAIR Data Services gives researchers the ability to discover and understand data through dataset search, classification, and metadata browsing, aligned to the FAIR data principles. Workspaces is a secure and audited collaborative environment which leverages scalable cloud compute. Data can be uploaded and analysed using Aridhia's customised built-in tools as well as users bringing their own tools.
http://www.aridhia.com

Cambridge Cancer Genomics build the software to enable data-driven precision oncology and systematically develop data-driven biomarkers indicative of treatment response. CCG believe that increasing amounts of clinical and genomic data have the potential to transform cancer treatment and enable oncologists to make smarter decisions about which drug to use in which circumstance.
https://www.ccg.ai

Cambridge Epigenetix (CEGX) is a life sciences tools and analytics company that produces technology to generates more data from DNA. DNA contains more information than just the A, C, G, T code. Epigenetics specifies cell fate, age, response to environment and is disrupted in the very early stages of disease. The interaction of genetics and epigenetics is fundamentally important to biology and disease states. CEGX's technology accurately measures both the genetic and epigenetic dimensions from DNA.
https://cambridge-epigenetix.com

Congenica is a world leader in clinical genomics software for inherited diseases. BGI Genomics and UniteGen have recently signed commercial contracts to use Congenica's proprietary enterprise software, Sapientia™ to support their operations in China.
https://www.congenica.com

DNANudge, pioneer of a rapid genotyping technology – a 'lab on a chip' - that aims to improve and inform an individual's lifestyle choices using their DNA. After a rapid, non-invasive DNA test consumers receive their individual nutrition or skincare related DNA report direct to their mobile phone. They can then make personalised, biologically informed choices while they shop, using the App or wearable device.
https://www.dnanudge.com

Offer 1: **Whole Genome Sequencing, Software & Bioinformatics**

Eagle Genomics innovates at the intersection of biology, data sciences and bioinformatics to develop enterprise platform solutions for the microbiomics and genomics era. Over the last decade, Eagle Genomics have collaborated with a range of blue-chip clients in the healthcare, personal care and agritech sectors, enabling them to deliver game changing products and technologies into their respective markets. https://www.eaglegenomics.com/about-eaglegenomics

Edinburgh Genomics Centre, a Core Facility at the University of Edinburgh, is one of the UK's largest open access sequencing operations. They offer the capacity to undertake large scale population studies; opportunities to partner on the development of whole genome sequencing and allied services; and commercial partnerships are available for agri-genomics programmes. https://genomics.ed.ac.uk

Fieldfisher supports government agencies and regulators as well as international commercial businesses and healthcare and analytics providers. Fieldfisher is a recognised expert in healthcare regulation, working with colleagues in the UK for regulators including the Human Tissue Authority and the Human Fertilisation and Embryology Authority as well as Genomics England. https://www.fieldfisher.com/en/sectors/life-sciences/life-sciences-law-blog/generation-genome-the-future-is-here-ip-regulatory-and-data-protection-challenges

Fios Genomics Ltd analyses high-dimensional, multi-variant datasets, and their proprietary computer solutions allow the analysis of large datasets, recognising patterns and trends associated with a trait, disease or drug response, saving processing time and avoiding the complications that can arise when analysing data in batches. https://www.fiosgenomics.com/about-us

Genomics plc is a pioneering healthcare company that aims to transform health through the power of genomics. In 2014, Professor Sir Peter Donnelly and three colleagues founded Genomics plc, with Peter becoming CEO in 2017. The company, which now employs over 100 people in the UK and the US, uses an extensive data platform and novel analytical tools in two areas: to improve our understanding of disease biology and find new drug targets; and to enable a prevention-first approach to healthcare. Its powerful risk prediction tools can get more of the right people into the appropriate screening, diagnosis, and treatment pathways for many of the most common diseases, including cardiovascular disease, diabetes and the most common cancers. For additional information about Genomics plc, please visit www.genomicsplc.com

Offer 1: **Whole Genome Sequencing, Software & Bioinformatics**

Illumina innovative sequencing and array technologies are fuelling ground-breaking advancements in life science research, translational and consumer genomics, and molecular diagnostics. The facility in Hinxton, underpinned the 100,000 Genome Project. Collaborating with Genomics England, the GenOMICC consortium, and the NHS for work on Covid 19 research. www.illumina.com

Life.bit empower Data Custodians to make their biomedical data findable and usable for Data Consumers. They have created a patented technology that enables researchers to run analyses on multiple, distributed datasets in-situ and avoid risky movement of highly-sensitive data. Recently awarded £200,000 by UK Research and Innovation as part of the DARE UK (Data and Analytics Research Environments UK) programme, Lifebit and partners are to develop and test a 'bridge' between health data at the NIHR Cambridge BRC and GEL's clinical genetic data – which will allow researchers to work with their combined data, without any data leaving either source. https://lifebit.ai

New Medicine Partners are an advisory company that creates strategies for precision medicine and precision health to advance healthy lifespan. The firm specialises in the development and integration of Precision Medicine and Genomic technologies. It is an independent entity, uniquely positioned to pull together and coordinate large, complex programs, bringing together the advantages of both public and private sector stakeholders. It aims to enable people to live healthily for longer by optimising the translation of precision medicine, including cell & gene and longevity-related technologies, into effective use worldwide. www.newmedicine.io

Nucleome Therapeutics is decoding the dark matter of the human genome to uncover novel ways to treat disease. The dark genome holds more than 90% of disease-linked genetic variants whose value remains untapped, representing a significant opportunity for drug discovery and development. We have the unique ability to link these variants to gene function and map disease pathways. Our cell type-specific platform creates high resolution 3D genome structure maps and enables variant functional validation at scale in primary cell types. This enables us to discover and develop novel, better and safer drugs. The initial focus of the company is on lymphocytes and related autoimmune disease. Our ambition is to build a robust pipeline of drug assets, with corresponding biomarkers. Nucleome Therapeutics was founded by leading experts in gene regulation from the University of Oxford and backed by investment from Oxford Sciences Enterprises. For more information, please visit http://www.nucleome.com

Offer 1: **Whole Genome Sequencing, Software & Bioinformatics**

Oxford Biodynamics are a biotechnology company with a proprietary epigenetic biomarker discovery platform, EpiSwitch®, based on the latest advances in regulatory genome architecture and its link to clinical outcomes and patient stratification. EpiSwitch® biomarkers based on chromosomal conformation signatures are a critical cog in personalised medicine and the company use their technology to select the right drug at the right dose at the right time for the right patient.
www.oxfordbiodynamics.com

Oxford Nanopore Technologies has developed the world's first and only nanopore DNA sequencer, the MinION. It is portable, real time, long-read, low cost device providing easy biological analysis. The MinION commercially available, and is in use in more than 55 countries.
https://nanoporetech.com

Pangea Data are an AI product based on novel unsupervised Natural Language Processing and first of its kind Natural Language Generation methods for automatically generating clinical narratives for regulatory reports; identifying 50% more patients including those who are undiagnosed; improving screening success rates by 400%; saving time by 80-90%. Breakthrough AI for finding more patients and automatically generating regulatory reports.
https://www.pangaeadata.ai

Vivan Therapeutics, a London based biotechnology company; offer cancer patients worldwide access to the most advanced personalised cancer therapeutics based on technology pioneered at The Mount Sinai School of Medicine, New York. The technology, known as the Personal Discovery Process (PDP), was developed to effectively address the finding that real-world patient tumours are made resistant to single-drug treatments. PDP targets the unique genetic complexity of each patient's tumour to identify the precise combination of drugs that works optimally on the patient's specific tumour. The Personal Discovery Process methods are licensed exclusively to My Personal Therapeutics.
https://vivantx.com

Offer 2

Diagnostic Tests & Reagents

The UK offers a uniquely agile environment to develop, test, validate and commercialise advanced biomarker assays and diagnostics solutions for a UK and global market. Partner and co-locate with leading companies and research centres, capitalising on the cutting-edge technology and expertise.

Complementary diagnostic companies are also highlighted in the "Diagnostic Export Offer: Magnificent Seven"

Offer 2: **Diagnostic & PCR Tests**

Almac Diagnostic Services support global pharma and biotech companies with their biomarker strategies from discovery through to companion diagnostic partnerships. Almac has clinical and research laboratories in Europe and the USA, alongside strategic partnerships in China, enabling us to support global studies. The services offered fall into three main categories: Genomic Services (Range of Platforms & Technologies, Sample Management, Data Sciences), Clinical Trial Assays (Research Use Assays, Clinical Use Assays, Global Clinical Trial Testing), Companion Diagnostics (CDx Development, CDx Manufacture, CDx Commercialisation). Find out more at: www.almacgroup.com/diagnostics

GeneFirst Limited are an ISO 13485 accredited Molecular Diagnostics based in Abingdon, Oxfordshire. GeneFirst are focused on infectious diseases, cancer diagnostics and personalised medicine. To date, the company continues to export COVID-19 PCR Detection kits via local distributors to hospitals and laboratories in the EU and Asia. End users include the Ministries of Health in Malaysia, Indonesia and Sri Lanka, as well as local hospitals in France, Poland and Czech Republic. Local distributors have been key partners in facilitating product registration, submitting tender responses, and training end users in the testing laboratories. XCeloSeq library preparation products employ the novel, patented, GeneFirst breakthrough technology, ATOM-Seq®, which can be used for targeted detection of cancer-associated mutations and gene fusions. This approach uses a simple and elegant chemistry to capture DNA, where original molecules act as primers and their 3' ends are extended by a polymerase.
www.genefirst.com

Life Science Group is an independent UK company formed of three divisions providing quality custom biological and in vitro products and services. Antibody Production Service (APS) provides contract generation of de novo monoclonal and polyclonal antibodies. Life Science Production (LSP) provides contract manufacture of cell culture sera, media, buffers and reagents. LSP also offers a range of off-the-shelf cell culture sera and reagents. Diagnostic Kit Services (DKS) offers aseptic product fill, kit design and packaging services:
https://lifesciencegroup.co.uk

Novacyt – Novacyt Group offer a comprehensive and developing portfolio of quality products backed by proven supply and delivery services to ensure the highest customer service standards. Their passion for customer-centric solutions advances the science behind diagnostics. This fuels the drive to deliver products that save lives and help fight against infectious disease.
They offer an increasing portfolio of in-vitro diagnostic tests, utilising molecular and protein detection technologies – supporting healthcare and disease prevention across the globe in the clinical and life science sectors. Innovations include the Mobile Processing Laboratories using PROmate, a direct-to-PCR and near-to-patient solution that can process COVID-19 samples within 90 minutes.
www.novacyt.com

Offer 2: **Diagnostic & PCR Tests**

Oxford Cancer Biomarkers deploy proprietary cancer biomarker tests to enable a precision medicine approach for cancer therapy. Developed by leading oncology researchers, their innovative technology platforms exploit unparalleled insights into the cancer genome. The company has advanced and marketed its genomic tests, which support clinically important decisions for colorectal cancer diagnosis and treatment. The company is translating its portfolio of tests to benefit other cancer treatment programmes. https://oxfordbio.com

PCR Biosystems develops and manufactures high-performance DNA and RNA amplification reagents for PCR and molecular diagnostic applications. The company provides a broad range of standard and custom solutions including bulk supply of reagents, OEM manufacturing and expert technical support to help our partners achieve the most from these market-leading enzymes and mixes. https://pcrbio.com

QuantumDx A UK based progressive MedTech company passionate about empowering the world to control disease and reduce suffering. QuantuMDx solve real-world diagnostic problems by creating multiplex molecular solutions for the Point of Need.
Q-POC™ is a rapid, simple to use, portable, sample to answer multiplex PCR device. It has been designed for use in a range of real-world settings, such as hospitals, clinics, pharmacies, dentistries, workplaces and in the field, providing accurate PCR results at the Point of Need. QuantuMDx has global operations and strategic partnerships – keeping it at the forefront of molecular diagnostics.
www.quantumdx.com

Randox is a global market leader within the in vitro diagnostics industry, Randox Laboratories develops innovative diagnostic solutions for hospitals, clinical, research and molecular labs, food testing, forensic toxicology, veterinary labs and life sciences. Randox have offices and distribution in over 145 countries and provide a wide range of services to biotechnology and IVD companies including geonomics testing capabilities. Randox spent more than £220 million developing their patented Randox Biochip. This state-of-the-art biochip technology has revolutionised the diagnostics industry because it allows multiple tests to be carried out from a single, undivided patient sample on a single testing platform.
https://www.randox.com

Offer 2: **Diagnostic & PCR Tests**

Svastia offers Genomic analysis and clinical reporting workflows to improve cancer treatment outcomes in hospitals and diagnostic laboratories. For biopharmaceutical research, Svastia enables contract research opportunities and provides access to novel clinical genomic data, with informed consent from patients, through its hospital network to accelerate biomarker discovery and validation. Svastia's 300+ multi-omic bioinformatics workflows are available for various research purposes.
https://svastia.ai

Yourgene Health is a leading integrated technologies and services business, enabling the delivery of genomic medicine. The group works in partnership with global leaders in DNA technology to advance diagnostic science. Yourgene primarily develops, manufactures, and commercialises simple and accurate molecular diagnostic solutions, for reproductive health, precision medicine and infectious diseases. The Group's flagship in vitro diagnostic products include non-invasive prenatal tests (NIPT) for Down's Syndrome and other genetic disorders, Cystic Fibrosis screening tests, invasive rapid aneuploidy tests and DPYD genotyping.
https://www.yourgene-health.com

Offer 3

Training & Education

The UK possesses world class Genomics Training and Education programmes and organisations founded to deliver the learning and development necessary

to enable both current and future NHS professionals to harness the power of genomic medicine for patient benefit. This draws on best practice across healthcare, education and digital technology.

Learning & Courses

British Medical Journal (BMJ) As a global healthcare knowledge provider, BMJ publishes one of the world's top five most cited general medical journals, The BMJ, and over 70 specialty journals. BMJ has successfully delivered on global health projects around the world. Our work focuses on pandemic preparedness, infectious diseases, health systems strengthening, human workforce development and primary care strengthening. We do this by partnering with global funders, governments, ministries of health, non-profit organisations, and other stakeholders - all to improve the course of human health. The company also offers digital professional development learning modules and clinical decision support tools. These products and services help health professionals manage the assessment, diagnosis, treatment and management of patients and improve the quality of care.
www.bmj.com

FutureLearn is a UK-based, world-leading social learning platform, with a mission to transform access to education. We partner with 260+ of the greatest universities and brands worldwide and work across the private and public sector. FutureLearn has 18m+ learners around the globe, our social learning approach facilitates community learning and fosters maximum engagement to enhance the learning experience through learning pathways for individuals and organisations wishing to develop skills from beginner to expert through our Short Courses, Expert Tracks and academically-accredited Micro credentials.

Courses in Genomics:
https://www.futurelearn.com/subjects/healthcare-medicine-courses/genetics

Health Education England's (HEE) purpose as part of the NHS, is to work with partners to plan, recruit, educate and train the health workforce. The national HEE Genomics Education Programme (GEP) is a multi-professional, multi-speciality, and multi-regional programme, delivering and advising on education and training to prepare the NHS workforce to make the best use of genomics in practice, and plan and develop the workforce to support delivery of the NHS Genomic Medicine Service (GMS). The GEP coordinates a range of educational resources, from Bitesize introductory materials through to a Master's in Genomic Medicine course, supplied by seven UK universities.
https://www.genomicseducation.hee.nhs.uk

Manchester University offers courses in genomics, translational medicine as well as bioinformatics, and already has successful oversees centres.
www.bmh.manchester.ac.uk/genomic-cpd

Oxford Molecular Diagnostic Centre are actively seeking international partnerships for education and training, Genomic data analysis, clinical interpretation and advice, research and development opportunities.
https://www.oxford-translational-molecular-diagnostics.org.uk

Training & Genetic Counselling

The Association of Genetic Nurses and Counsellors (AGNC) represents genetic counsellors, genetic nurses and non-medical, patient-facing staff working within Clinical Genetics, NHS Genomic Medicine Centres and wider healthcare settings in the UK and Ireland. We provide support for professionals working in the field, forums for education, scientific conferences, representation of the views of the profession, and we prescribe good standards of clinical practice. We support collaboration with other clinical and scientific colleagues and form a constituent group of the British Society of Genetic Medicine.
https://www.agnc.org.uk

Guy's and St Thomas' NHS Foundation Trust expertise includes an accredited Clinical Genetics and Genomics laboratory, offering genetic screening for adults, children, pregnancy, and athletes worried they might be at risk of inherited cardiac or respiratory diseases. They offer next-generation sequencing, including copy number variant analysis, improving diagnosis of inherited cardiac and respiratory conditions. We are home to The NHS South East Genomic Laboratory delivering genomic testing services across southern England. We provides genetic and genomic testing for a local population of 8.4 million. This network of laboratories will improve patient access for genetic testing and support the development of more personalised healthcare.
https://www.gsttcommercialservices.co.uk/Home.aspx

MolMart Experts in Diagnostic Genomics, MolMart applies the powerful technology of Genomics to help families make life-changing decisions at critical points in time. SureMart, their core offering, is an extensive preconception genetic screening service designed for couples who are planning to start a family. The test informs couples whether they are at high risk of having a child with a life-limiting genetic disease and offers actionable solutions to help them make the right decision. To support its portfolio of genomic tests, MolMart offers specialist Genetic counselling and post-test patient support to help couples make an informed decision about their family's health.
https://molmart.co.uk

Additional organisation The National Horizons Centre (NHC) is a Centre of Excellence for Innovation and Training in Biosciences and Healthcare. Our ambitions are delivered through research, training, and partnerships by bringing industry, academia and world-class lab and bioinformatic/digital facilities together to create real-world impact for the UK and beyond. The NHC's mission is to translate R&I discoveries into innovative solutions and address the skills gap in industry and healthcare through high quality skills training. We have specific expertise in a number of areas, including biomarker discovery, diagnostics, wearable devices, omics, cell and gene therapy, bioinformatics, cancer and other diseases.www.tees.ac.uk/nhc/

Training & Genetic Counselling

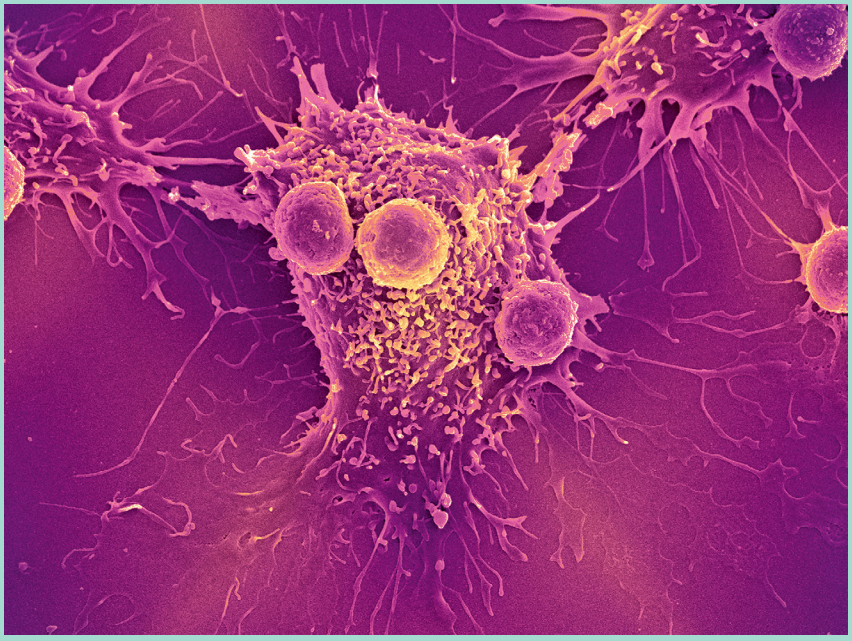
The University of Manchester Evolution, systems and genomics research at The University of Manchester is concerned with the understanding of gene and genome function, structure, sequence variation and long-term evolution. There are 130 research groups, with almost 700 researcher members and approximately £50 million in live grant funding at any one time. Genetic and genomic work includes neonatal testing through the women and children domain of the Manchester Academic Health Science Centre (MAHSC) and working with data from millions of completed genomes. They are also closely linked with the world leading Manchester Centre for Genomic Medicine. The University infrastructure underpins discovery work and includes, Wellcome Trust Centre for Cell-Matrix Research, Genetics and Genomics facilities, Gene Editing Unit, Henry Royce Institute, Christabel Pankhurst Institute. The University has integrated clinical research links across Manchester with programmes led by experts in Salford (NF2, renal RCs, adult metabolic disorders), The Christie (rare cancers) and Manchester Hospitals Foundation Trust (MFT), including the largest Children's Hospital in the UK, a world leading Genomics centre, a large tertiary centre for eye disease, and specialist services for all age groups. A Manchester-based consortium, Innovate Manchester Advanced Therapy Centre Hub (iMATCH), was established to scale up activity across cell and gene therapies. Delivered through a comprehensive programme involving the University of Manchester, three hospitals (adults and children) and nine commercial partners, iMATCH has led to increased capacity to safely deliver these therapies at scale. http://research.bmh.manchester.ac.uk/genomicmedicine

Offer 4

Clinical Genomics Services

The UK has Genomics expertise in organisations specialising in key clinical Genomics and Integrated services including inherited children's disease, cancer care, cardiac and pharmacogenomics.

Complementary NHS organisations are also highlighted in the "NHS Innovation Offer". Please contact us to find out more.



Offer 4: **Clinical Genomics Services**

Great Ormond Street Hospital (GOSH) is a world-famous children's hospital, and the Genomic service at GOSH is one of the largest in the UK. GOSH offers patients clinical assessments, genetic tests, for children and adults, and prenatal testing. The clinicians and laboratory clinical scientists work closely together with GOSH specialist clinical teams in the delivery of a comprehensive multidisciplinary genomics service. GOSH offers a Molecular Genetics Service which involves diagnostic, carrier, and predictive testing for a comprehensive range of single gene disorders as well as a DNA banking service. GOSH is keen to create international partnerships so that more children with rare and complex disease can access their services.
http://www.labs.gosh.nhs.uk/laboratory-services/genetics

Genomic Quality Assessment (GenQA) is an UK NEQAS External Quality Assessment (EQA)/Proficiency Testing provider, covering the entire clinical genomics service from patient counselling, sample preparation, testing processes, results interpretation and reporting. We offer more than 100 unique EQAs for a range of rare and inherited disorders and acquired diseases, including specialist testing such as preimplantation genetic testing (PGT), non-invasive prenatal testing (NIPT), newborn screening, pharmacogenomics and individual competency testing. We provide laboratories with a mechanism to assess the standard of their testing and educate genomics laboratories and clinicians worldwide to provide high quality patient testing.
https://genqa.org

PrecisionLife is a global techbio company driving precision medicine for chronic diseases to power more personalized drug discovery and healthcare. Their proven, patented analysis platforms generate more insights from clinical data than any other approach, understanding the drivers of disease biology to stratify patient populations at an unprecedented level of resolution. These unique insights are transforming drug discovery with novel targets for unmet medical needs, enabling more successful patient-focused clinical trials, and improving healthcare with precision diagnostics, risk models and clinical decision support. Delivering a new age of better, more personalized therapy options to improve health, for everyone.
www.precisionlife.com

The Christie NHS Foundation Trust is one of Europe's largest experimental cancer medicine centres, with a portfolio of 650 clinical studies. It is leading the way in researching innovative techniques to expand the application of a new generation of cell and gene therapies, using DNA to personalise cancer care treatments. Christie Education is a unique educational healthcare institute, supporting the development of professionals in cancer care delivery. A strong partnership with the University of Manchester provides access to a suite of education surrounding Genomic Medicine and Transformative Oncology, developing a workforce that understands and applies genomics for excellent patient care.
www.christie.nhs.uk/international

The Royal Brompton and Harefield Hospitals make up the largest specialist heart and lung centre in the UK and among the largest in Europe. Their expertise includes an accredited Clinical Genetics and Genomics laboratory, offering genetic screening for adults, children, pregnancy, and athletes worried they might be at risk of inherited cardiac or respiratory diseases. They offer next-generation sequencing (NGS), including copy number variant analysis, improving diagnosis of inherited cardiac and respiratory conditions (ICC and IRC).

This includes testing for cystic fibrosis (CF), aortopathies, vasculopathies and familial hyperchloesterolaemia. The Royal Brompton and Harefield Hospitals are actively exploring opportunities with international partners to work with international partners in this area on a commercial basis.
https://www.rbht.nhs.uk/our-services/clinical_support/laboratories/clinical-genetics-and-genomics-laboratory

Clinical Genomics Services Collaborations

AstraZeneca is a global, science-led biopharmaceutical company that focuses on the discovery, development, and commercialisation of prescription medicines in Oncology, Rare Diseases and BioPharmaceuticals, including Cardiovascular, Renal & Metabolism, and Respiratory & Immunology.

Their aim is to transform the lives of patients with improved outcomes and a better quality of life, through more effective treatment and prevention, ultimately working towards a cure for some of the world's most complex diseases.

By enhancing their understanding of disease biology, through investing in technologies such as genomics, gene editing and data science and AI, at scale, they are identifying novel drug targets with strong links to the drivers of disease. Their ambitious genomics initiative launch in 2016 – analysing 2 million genomes by 2026, remains firmly on track through coupling internal expertise with partnerships across the world to uncover novel rare variants of disease and fuel the next wave of precision medicines for patients who need them most.
https://www.astrazeneca.com

Offer 4: **Clinical Genomics Services**

GSK is a UK headquartered, science-led global healthcare company discovering, developing and manufacturing innovative medicines, vaccines and consumer health products for millions of people across the world. GSK's Pharmaceuticals business has a broad portfolio of innovative and established medicines in respiratory, HIV, immuno-inflammation and oncology. GSK's approach to develop transformational medicines and vaccines is guided by its R&D strategy, focused on the science of the immune system, genomics and use of advanced technologies. Key to this is functional genomics, which, combined with insights from human genetics and the application of AI/Machine Learning, means it can pinpoint causes of disease with greater accuracy and speed, and in turn accelerate the delivery of genetically validated drug targets.
https://www.gsk.com/en-gb

The Joint AstraZeneca-Cancer Research UK Functional Genomics Centre is a collaborative environment where industry and academia work side-by-side in a jointly-run facility to provide researchers access to CRISPR technologies, to enable UK research to perform on a world stage in the functional genomics field. The Centre is based in the Cambridge Biomedical Campus – next door to AstraZeneca's Discovery Centre (DISC) and CRUK's Cambridge Institute. The partnership is building a UK-based critical mass of expertise in multidisciplinary skills required to use CRISPR and other gene editing technologies in translational oncology research to address areas of unmet need for patient benefit.
https://www.cruk.org/fgc

Cancer Care

The Centre for Genomic Research (CGR) is a dedicated centre that facilitates cost-effective access to multiplatform sequencing and array technologies for researchers worldwide. They offer a wide range of applications, with associated informatics and analytical processing of data and functional interpretation. The commitment to research excellence is reflected in their collaboration in extensive peer reviewed studies and the attraction of more than £24 million in research income since 2008. Pioneering research projects are continually advancing their capabilities, consequently improving our service provision. They boast a diverse portfolio of academic research that spans:

- Human and veterinary medicine.
- Biotechnology.
- Environmental and evolutionary biology.
- Agri-tech.
- Archaeology, anthropology and zoology.

https://www.liverpool.ac.uk/genomic-research

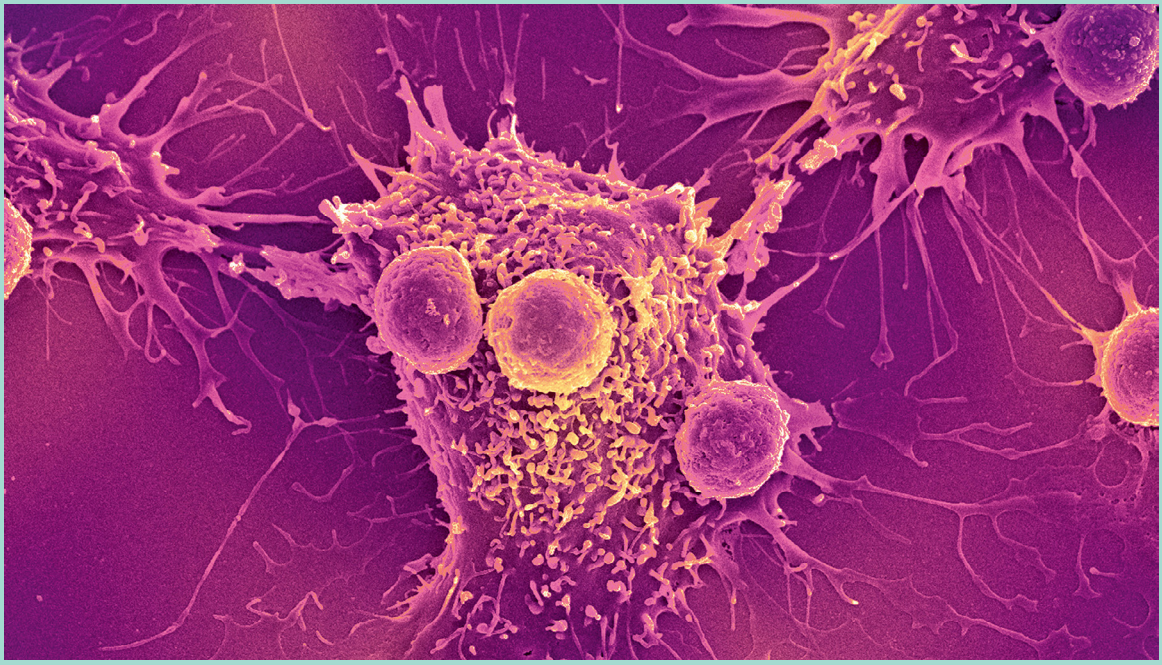
The Royal Marsden NHS Foundation Trust is a world leading cancer centre. Together with its academic partner, The Institute of Cancer Research, it is one of the largest comprehensive cancer centres in Europe. The hospital delivers the very highest levels of care from expert specialists in modern facilities for private patients wishing to travel to London. The Trust's innovative cancer genomic testing delivers accurate diagnosis, prognosis and disease monitoring helping our cancer specialists bring personalised treatments to patients sooner.
www.royalmarsden.nhs.uk/genomics

In addition, its leading cancer genetics unit aims to promote cancer prevention, early detection and provide second opinion consultations.
www.royalmarsden.nhs.uk/genetics

Offer 5

Therapeutics, Cell & Gene Therapy

Cell and Gene Therapy (CGT) have been at the frontline of advances in personalised medicine and the UK have the largest CGT cluster outside of the US. The UK offers a great environment for building a leading global company in the cell and gene therapy space in addition to the UK system offer fast commercial approval of companies' CGT products. The UK also has a compelling offer for clinical research and the ability to stratify patients for research and treatment.



Offer 5: **Precision Therapeutics, Cell & Gene Therapy**

Achilles Therapeutics
Biopharmaceutical company using the basis of tumour evolution to develop personalised T cell therapies by targeting protein markers that are unique to individuals and found on the surface of the cancer cell, which are detectable by the immune system.
https://achillestx.com

Cell & Gene Therapy Catapult
Cell and Gene Therapy Catapult, the world's most supported cell and gene therapy environment, was established as an independent centre of excellence to advance the growth of the UK cell and gene therapy industry, by bridging the gap between scientific research and full-scale commercialization. Its aim is to make the UK the most compelling and logical choice for UK and international partners to develop and commercialize these advanced therapies.
https://ct.catapult.org.uk

Freeline
Biotechnology company using AAV technology with an aim to deliver a one-time gene therapy treatment to provide cures for inherited debilitating disease, through permanently sustained physiological protein levels. Initial focus is on monogenic diseases.
https://www.freeline.life

Orchard Therapeutics
At Orchard Therapeutics, our vision is to end the devastation caused by genetic and other severe diseases. We aim to do this by discovering, developing and commercializing new treatments that tap into the curative potential of hematopoietic stem cell (HSC) gene therapy. In this approach, a patient's own blood stem cells are genetically modified outside of the body and then reinserted, with the goal of correcting the underlying cause of disease in a single treatment. Orchard is advancing a deep pipeline spanning pre-clinical, clinical and commercial stage HSC gene therapies designed to address serious diseases where the burden is immense for patients, families and society and current treatment options are limited or do not exist.
https://www.orchard-tx.com

Offer 5: **Precision Therapeutics, Cell & Gene Therapy**

Oxford Biomedica

Oxford Biomedica is a leading, fully integrated, gene and cell therapy group. The company has built a sector leading lentiviral vector delivery platform LentiVector®, which they leverage to develop in vivo and ex vivo products both in-house and with partners. They have created a valuable proprietary portfolio of gene and cell therapy product candidates in the areas of oncology, CNS disorders and liver diseases. Through their success in lentiviral vectors and large-scale manufacturing of the adenovirus vector-based AstraZeneca COVID-19 vaccine, the company has demonstrated the versatility of their platform and have extended their scope to all types of viral vectors.
https://www.oxb.com

ReNeuron

Clinical stage stem cell business - developing stem cell therapies targeting areas of unmet need. The companies human retinal progenitor cell line (hRPC) is being developed for the treatment of retinal diseases. Use of an immortalised neural progenitor cell line (CTX) is being developed as a therapy for the treatment of patients left disabled by a stroke. The main focus of the company is the development of exosomes as a delivery vehicle for a range of therapeutic payloads.
https://www.reneuron.com

Touchlight

Touchlight, based in London, UK, provide rapid, enzymatic DNA development and manufacturing for all advanced therapy production, including mRNA, viral and non-viral gene therapy and DNA API. Touchlight is building the world's largest DNA manufacturing facility, by capacity, and the company's dbDNA™ technology is able to produce DNA with unprecedented speed and scale, with the ability to target genes with a size and complexity that is impossible with current technologies. dbDNA is a minimal, linear, covalently closed structure, which eliminates bacterial sequences. Clients can be supported from pre-clinical through development and supply, to licencing and tech transfer for use in-house.
https://www.touchlight.com

Silence Therapeutics

Silence Therapeutics is Europe's leading biotechnology company developing gene 'silencing' technology for clinical use. It is at the forefront of the discovery, development and delivery of novel short interfering ribonucleic acid therapeutics for the treatment of diseases with significant unmet medical need. Silence's proprietary mRNAi GOLD™ platform harnesses the body's natural mechanism of RNAi (RNA interference) to create precision medicines designed to silence disease-associated genes. Using this, it is developing several innovative siRNAs, and its wholly owned pipeline is currently focused on three therapeutic areas of high unmet need: hematology, cardiovascular disease, and rare diseases.
https://silence-therapeutics.com/home/default.aspx

UK Trade Associations

UK Trade Associations also provide multiple services to their members, engage extensively across the UK health and care system, and work with DIT international, including providing input on regulations, guidance and standards as they relate to trade.

UK Trade Associations

ABHI is the UK's leading industry association for health technology. We represent the industry to stakeholders, such as the government, NHS and regulators. ABHI's 300 members account for approximately 80% of the sector by value.
www.abhi.org.uk

AXREM is the trade association representing the suppliers of diagnostic medical imaging, radiotherapy, healthcare IT and care equipment in the UK.
www.axrem.org.uk

The BioIndustry Association (BIA) is the **trade association for innovative life sciences in the UK**. We promote an ecosystem that enables innovative life science companies to start and grow successfully and sustainably, and we do this through Influence, Connect, Save. The BIA Business Solutions Scheme provides significant savings that are helping members to grow more cost-effectively.
www.bioindustry.org

BIVDA is the **national industry association for the manufacturers and distributors of IVD products** in the UK and has 180 members representing IVD companies active in the UK ranging from the UK subsidiaries of multinationals through UK manufacturers and distributors and start-up companies such as spinouts from academia. BIVDA members currently employ over 8,500 people in the UK, with a total industry turnover of £1.1 billion in 2020.
www.bivda.org.uk

GAMBICA is the Trade Association for **Instrumentation, Control, Automation and Laboratory Technology** in the UK. Gambica forms a community that shares knowledge and best practice, influence policy, standards and regulation for the benefit of the industry, publish unique market forecasts and help members develop business through exhibitions and events.
www.gambica.org.uk

Medilink UK network brings together the NHS, industry and academia to **increase innovation and improve patient care**. Its primary focus is on **fast tracking the development of Life Science companies** through enhancing their connectivity and through the provision of **paid-for consultancy services, covering Innovation and Commercialisation and International Trade.** It has 6 offices across UK regions and office in Wales.
www.medilinkuk.com/about-us

Standards, Guidance & Regulations

NICE International role is to improve outcomes for people using the NHS and other public health and social care services. NICE offers a fee-based consultancy service to developers of MedTech, working with innovators during the early stages of product development to encourage consideration of relative clinical and cost effectiveness of products. NICE appointed experts support the development of evidence that demonstrates product value and provide detailed feedback on clinical, economic development and evidence generation plans.
www.nice.org.uk

Medicines and Healthcare products Regulatory Agency (MHRA) Recognised globally as an authority in its field, the agency plays a leading role in protecting and improving public health and supports innovation through scientific research and development. MHRA is the UK's regulator of medicines, medical devices and blood components for transfusion, responsible for ensuring their safety, quality and effectiveness. Every year MHRA staff are invited to speak at conferences and deliver trainings around the world.
www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency/about

The UK Accreditation Service (UKAS) The United Kingdom Accreditation Service (UKAS) is appointed by government as the UK's sole national accreditation body. UKAS assesses organisations that provide conformity assessment services, such as certification, testing, inspection, calibration and verification against recognised international standards. UKAS accredits those organisations that demonstrate ongoing competence, integrity and impartiality. UKAS accreditation is an integral part of the UK's Genomics Offer. It provides independent oversight of the competence of laboratories and other conformity assessment bodies, enabling patients, the public, researchers and medical professionals to have confidence in the reliability and credibility of testing methods and results. For example, UKAS accredits services provided by the seven NHS England Genomic Laboratory Hubs across a number of NHS Foundation Trusts, and a number of genomic services in Wales, Scotland and Northern Ireland. These services provide and coordinate a wide range of genomic tests across the regions they serve. UKAS accreditation is also underpinning the use of genomic technologies in areas such as forensic DNA testing and animal and plant biology.'
https://www.ukas.com

Invest in the UK

The UK is also a key destination for investment

- The UK offers a robust, business-friendly environment to reliably expand, trade and invest.
- The UK has a mature, high-spending consumer market and an open, liberal economy, world-class talent and a business-friendly regulatory environment.
- Our language, legal system, funding environment, time zone and lack of red tape helps make the UK one of the easiest markets to set-up, scale and grow a business.

Why Invest in the UK for Precision Medicine

- The UK's ageing population of over 65 million ethnically diverse, multicultural people can enable internationally relevant research and clinical trials.
- The UK is seen globally as an early investor in and adopter of precision medicine at scale – the first nation in the world to apply genome sequencing at scale for rate and inherited disease.
- The UK has a world-leading academic and science base with access to skilled people.
- Specialised infrastructure to support precision medicine delivery at scale in a national health system.
- Support for technology development and informatics platforms.
- 400 public bodies and charities involved in precision medicine.

Some examples of investment opportunities include the following:

- **Precision medicine in Scotland**: Design, develop, validate and implement precision medicine application in an integrated healthcare environment for commercialisation to a global market. https://www.great.gov.uk/international/content/investment/opportunities/precision-medicine-in-scotland
- **Cell and gene therapy in Hertfordshire**: Design, develop and supply transformative advanced therapies, all from the largest cell and gene therapy cluster outside the USA. https://www.great.gov.uk/international/content/investment/opportunities/cell-and-gene-therapy-in-hertfordshire
- **Precision medicine biomarkers and diagnostics in Northern Ireland**: Launch your biomarker journey and develop advanced precision diagnostics in Northern Ireland. https://www.great.gov.uk/international/content/investment/opportunities/precision-medicine-biomarkers-and-diagnostics-in-northern-ireland
- **Diagnostics and early intervention for healthy ageing**: Meet the growing demand for digital and molecular diagnostics innovations, and smart, assistive technologies, to support early intervention in ageing diseases. https://www.great.gov.uk/international/content/investment/opportunities/diagnostics-and-early-intervention-for-healthy-ageing

Disclaimer

This brochure provides an overview of examples of solutions and innovations that the UK life sciences sector offers.

This brochure is intended as an initial engagement tool to support dialogue with other countries, health systems, companies, and industries to encourage these parties to take a closer look at the UK.

This document is not a policy position paper from UK Government.

It is not meant to be an exhaustive, complete representation of all UK genomic organisations.

Parties interested to learn more about the UK and solutions, or suppliers tailored to their needs should contact their local Embassy, High Commissioner or Consulate to start a discussion.

GREAT
BRITAIN & NORTHERN IRELAND

Department for International Trade

For further information on the UK's Genomics and Personalised Medicine offer, please contact:

Call: +44(0) 20 7215 5000
Email: healthcare.uk@trade.gov.uk
www.gov.uk/healthcareuk

In partnership with: BIA

In partnership with: ABHI

In partnership with: Genomics england

In partnership with: NHS England

Department for International Trade