

Genome Research Limited

Annual Report and Financial Statements

For year ended 30 September 2022

**Empowering innovation
and world-changing
science across
academic and
commerical sectors**

The Data Centre, situated at the heart of the Wellcome Genome Campus, is one of the largest sciences data centres in the world

**We conceive and
conduct life sciences
research at a scale
and ambition few can
match**

It provides Wellcome Genome Campus researchers with state-of-the-art facilities to store, interpret and analyse genomic and medical data through visualisation, agile management and collaborative forward planning.



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Trustees' Report

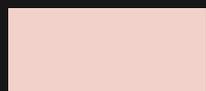
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Collaborators around the world are able to carry out their own genomic experiments, unhindered by regional bandwidth or computational constraints, due to innovative federated access and server-side query processing, coupled with our leadership of global initiatives to standardise and harmonise genomic and medical data around the world.

**We run a global hub
for genomic research,
innovation and
collaboration between
scientists, clinicians,
governments and
the public**



Genomic-based studies are profoundly changing the delivery and application of healthcare worldwide; from delivering near real-time insights into the evolution and spread of a global pandemic to identifying the genetic seeds of

adult cancer sown before birth.

So, it is fitting that as Genome Research Limited starts its new quinquennium, the Wellcome Sanger Institute, Wellcome Connecting Science and the wider Wellcome Genome Campus community are entering a new phase to build the partnerships, pipelines, and knowledge needed to deliver the benefits of genomic research to all.

Over the past two years our quinquennial review was conducted by our core funder Wellcome, culminating in a resounding endorsement of our organisational and scientific strategy, with an award designed to cover the full 5 year plan. However, in common with many organisations, we are experiencing the impact of extraordinary inflationary pressures arising as a result of the war in Ukraine, Brexit and COVID. This is likely to impact our ability to execute our scientific strategy in full without taking action to manage the budget deficit. Through efficiency measures, along with an additional contribution from Wellcome to assist with the impact of increased energy costs, we believe we can continue to deliver our scientific objectives. The new quinquennium covers 1 October 2021 until 30 September 2026.

We are founded on core principles of openness, transparency, collaboration, and capacity building. The power of genomics will only be fully realised through rapid sharing of data and discoveries throughout the global scientific community. The COVID-19 pandemic is a case in point. But this alone is not enough. Genomics will only truly deliver on its potential when all researchers, clinicians, and policymakers can access, understand, and apply the information.

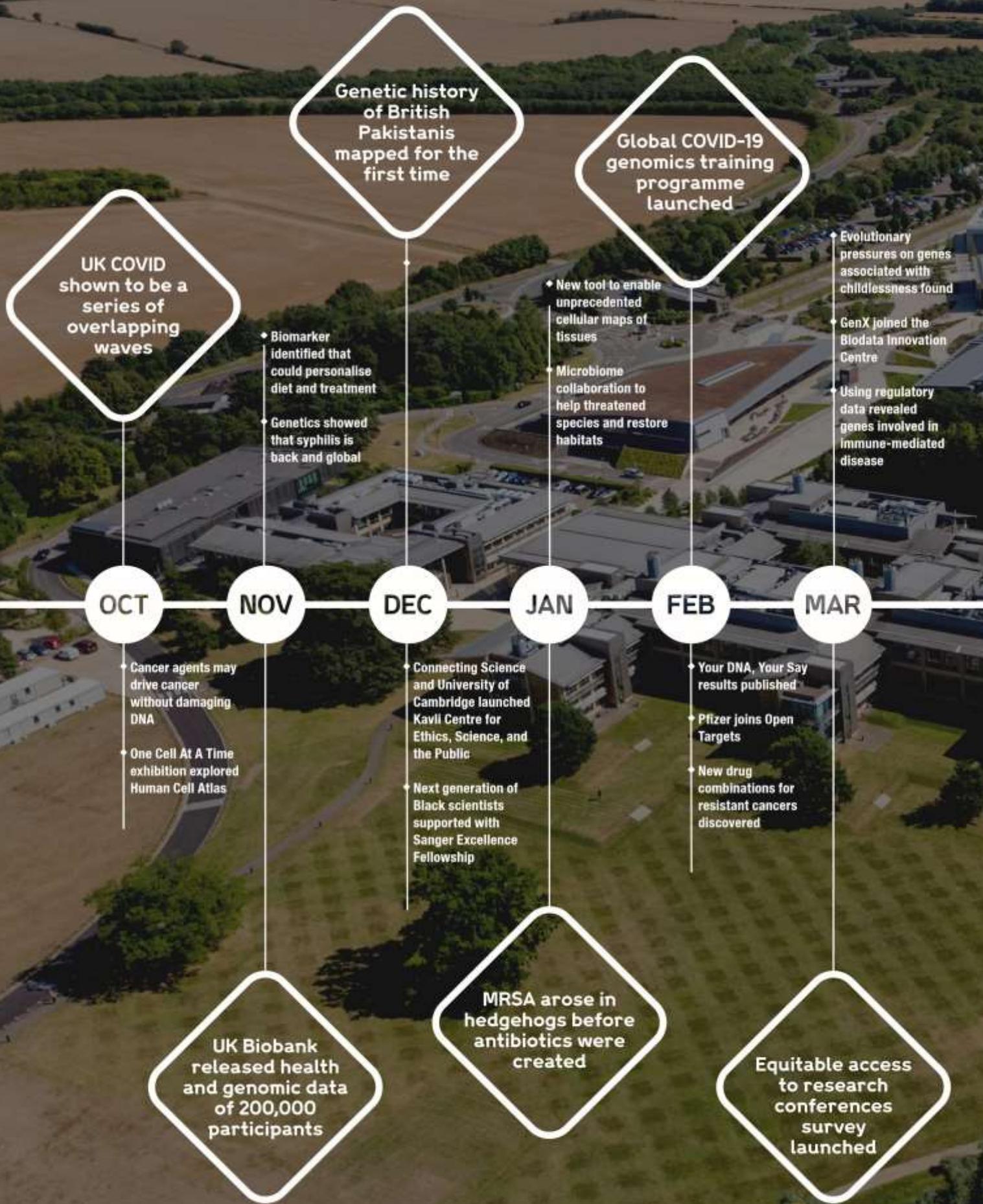
We are committed to embedding genomic research, surveillance, and infrastructure around the world. We fund and coordinate the work of the Genomic Alliance for Global Health (GA4GH) to standardise genetic and health data

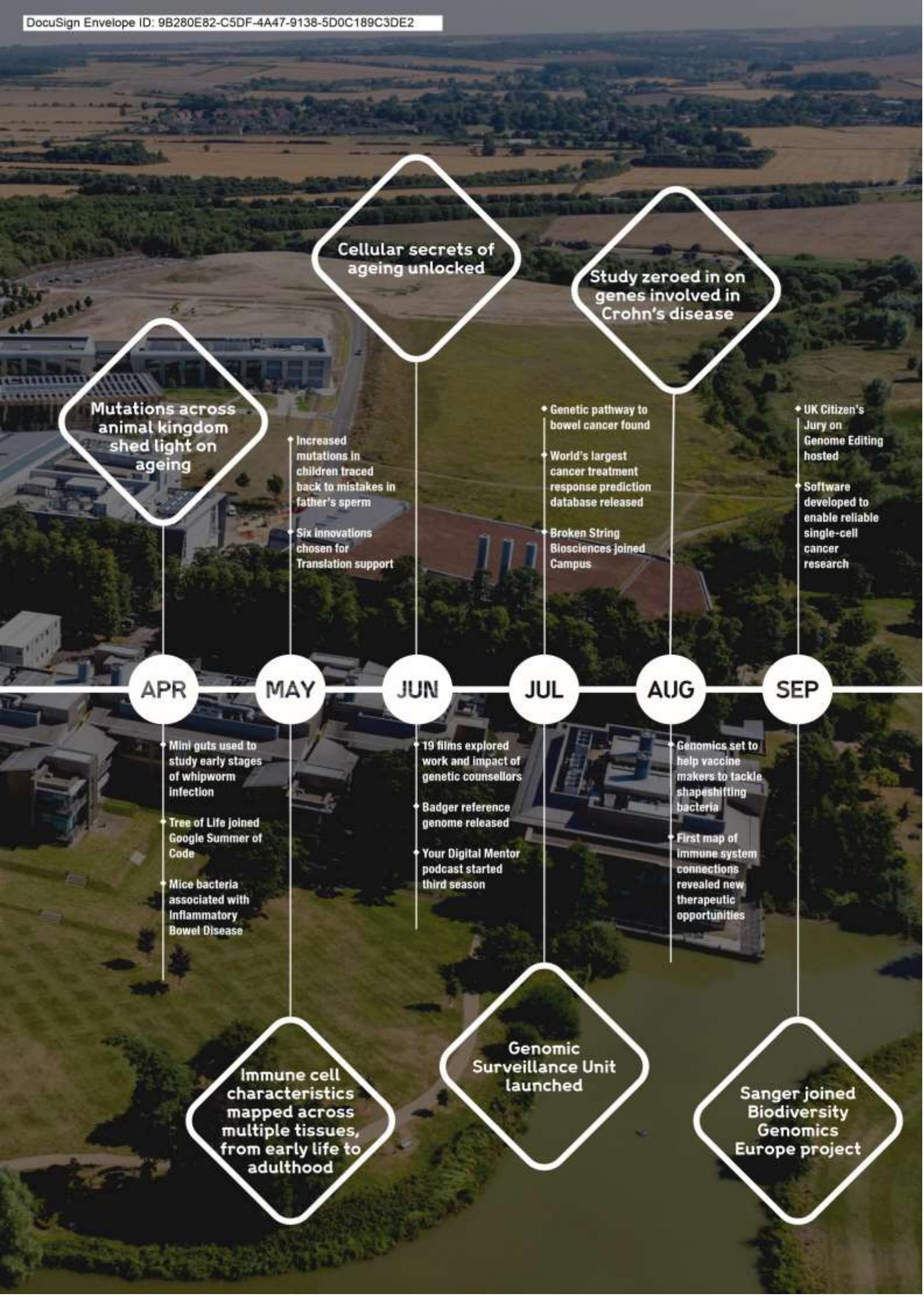
sharing. The Wellcome Sanger Institute, in partnership with Wellcome Connecting Science and the University of Cambridge, nurtures the next generation of genomic researchers, social scientists and clinicians. Through international collaborations we help governments and researchers build DNA sequencing and analysis pipelines that inform health policy.

Our work requires bold ambition and painstaking attention at scale. We create the partnerships, tools, and approaches needed to understand genetic variation within individuals and communities, and across countries and continents, to tailor healthcare and lifestyle interventions. In partnership with scientists across the globe, we explore the interplay of genomics and the environment in different regions to understand inherent differences in disease prevalence and resistance to infection. We are pioneering the delivery of reference genomes for all species living in Britain and Ireland to power future research into food security, biodiversity, and climate change mitigation. Our genome assembly pipelines are building a reference base of the world's species that will inform future conservation efforts. At the other end of the biological spectrum, we are mapping the development, communication, and movement of individual cells over a person's lifetime to understand how genetic variation affects people over time; from the underpinnings of cancer to how people's immune response to COVID-19 changes with age. The Wellcome Sanger Institute will continue to push scientific boundaries through a core mission of discovery science that will be unchanged by the anticipated change of Director during 2023 and the expansion of the wider Wellcome Genome Campus

We seek to ensure that everyone enjoys the economic and health benefits that genomic research brings. We are proud of the diversity of knowledge and insights our staff bring from their different lived experiences. But we are aware that these differences may be barriers to equal access. To ensure that we draw on the widest spectrum of skills for the benefit of all, we are working to improve our support and inclusion of

2022 timeline





Mutations across animal kingdom shed light on ageing

Cellular secrets of ageing unlocked

Study zeroed in on genes involved in Crohn's disease

APR

MAY

JUN

JUL

AUG

SEP

- Mini guts used to study early stages of whipworm infection
- Tree of Life joined Google Summer of Code
- Mice bacteria associated with Inflammatory Bowel Disease

- Increased mutations in children traced back to mistakes in father's sperm
- Six innovations chosen for Translation support

- 19 films explored work and impact of genetic counsellors
- Badger reference genome released
- Your Digital Mentor podcast started third season

- Genetic pathway to bowel cancer found
- World's largest cancer treatment response prediction database released
- Broken String Biosciences joined Campus

- Genomics set to help vaccine makers to tackle shapeshifting bacteria
- First map of immune system connections revealed new therapeutic opportunities

- UK Citizen's Jury on Genome Editing hosted
- Software developed to enable reliable single-cell cancer research

Immune cell characteristics mapped across multiple tissues, from early life to adulthood

Genomic Surveillance Unit launched

Sanger joined Biodiversity Genomics Europe project

Trustees' Report

The Directors of Genome Research Limited ("the Charitable Company") who are also the Trustees of Genome Research Limited for the purposes of the Charities Act 2011, present their Annual Report (including the Directors' Report and Strategic Report) and audited Financial Statements for the year ended 30 September 2022.

The following report sets out how we achieve our charitable objects for public benefit. Our charitable objects are:

- To advance research into investigation of the human genome and to publish the useful results of such research
- To advance scientific and medical research

Objectives and activities

Genome Research Limited's ("GRL") strategic objectives are:

- Advance understanding of biology using genome sequences and biodata.
- Apply genome science for human health and other societal benefits.
- Foster knowledge exchange and discussion of the scientific, medical and wider implications of genomes.

Vision

Motivated by the remarkable challenges and opportunities presented to 21st century science by genome sequences, the ambition of GRL over the next two decades is to strengthen its well-established scientific foundations and to build on them, such that the Wellcome Genome Campus becomes an international centre for scientific, business, cultural and educational activities emanating from genomes and biodata.

The objectives are delivered via three main activities as follows:

Genome Research Limited

- Research (via Wellcome Sanger Institute)

- Learning and Engagement (via Wellcome Connecting Science).

- Innovation (via Enterprise and Innovation)

Mission

The mission of GRL is to maximise the societal benefit of knowledge obtained from genome sequences. We continue to monitor and adapt our strategy to ensure we remain a global research leader, recruit and retain our thought leaders, maintain the level of scale and funding and maintain our position at the leading edge of technology.

Sanger Institute

One of the major challenges and opportunities for biological science in the 21st century is to understand and utilise the DNA sequences that constitute the genetic code of humans and other living organisms.

The Sanger Institute uses information from genome sequences to advance understanding of biology and improve health.

To achieve this goal, we conduct basic discovery and translational research delivered across five scientific research programmes and an Associate Research Programme, the high level aspirations for each Programme over the next five years are shown below:

- The **Cancer, Ageing and Somatic Mutation** Programme will use genome sequencing and experimental models to study the causes and consequences of somatic mutations through the course of life, across organ systems, in health and in disease.
- The **Cellular Genetics** Programme will use transcriptome sequencing and microscopic spatial tissue imaging to redefine the repertoire of human cell types, and to

understand their functional states and relationships in health and disease, during development and adulthood.

- The **Human Genetics** Programme will use genome sequencing and experimental cell models to understand the genetic causes and biological mechanisms of disease susceptibility and progression, focusing on developmental disorders and diseases of the blood and immune system, transforming the clinical utility of human genetic variation.
- The **Parasites and Microbes** Programme will use genome sequencing to generate large longitudinal datasets over time, transforming understanding of the evolutionary dynamics of disease-causing bacteria, protozoa, helminths, mosquitoes and the human microbiome with application in pathogen surveillance for disease control.
- The **Tree of Life Programme** will use new sequencing technologies to produce high quality reference genomes across the diversity of eukaryotic life, analysing the data to understand life's origins, conserve biodiversity and provide the underpinnings of a new biotechnology
- The **Associate Research Programme** (currently comprised of Health Data Research UK, Open Targets, The Genomic Surveillance Unit and our Associate Faculty) will continue to diversify, enrich and strengthen the organisational science portfolio through strategically designed partnership programmes and Associate Faculty.

Our scientific niche is in large-scale, high-throughput biology, often incorporating systematic genome-wide screens. This is enabled by major data generation platforms in DNA sequencing and cellular genetics, microscopic and spatial imaging, with an accompanying large IT platform supporting computational data interpretation and analysis.

An overarching theme of our science is genome variation; naturally occurring and engineered, inherited and somatic; explored in human beings, pathogenic microorganisms, human and eukaryotic cells. These studies of genome variation will provide insights into human and pathogen evolution, the phenotypic consequences of genome variation and the processes which cause mutations. We will generate deeper understanding of the genetic causes, pathogenesis and epidemiology of human disease, of human development and ageing, of human gene function and the evolution, function and interactions of life on earth. We aim to identify therapeutic and vaccine targets, to explore the genomic changes influencing sensitivity, resistance to such agents and to aid the conservation of biodiversity and support biotechnology.

The Sanger Institute sits at the centre of a global network of science, engaging proactively with researchers external to the Institute, enabling and empowering their science and extending our scientific repertoire through their biological insights and questions. A major priority of our research portfolio is the scientific questions arising from the health issues facing low and middle income countries. We continue to champion the policy of early and open data

release and ensure resources generated through our research enable the research of others through publicly accessible databases.

Wellcome Connecting Science

Wellcome Connecting Science's mission is to enable everyone to explore genomic science and its impact on research, health and society.

Drawing on the ground-breaking research taking place on the Wellcome Genome Campus, Connecting Science inspires new thinking, sparks conversation, supports learning, and measures and understands global attitudes and perspectives. We connect researchers, health professionals and the wider public, creating opportunities and spaces to explore genomic science and its relationship with people and the world around us.

Enterprise and Innovation

Enterprise and Innovation is the third activity in delivering our ambitious vision for the Genome Campus. We aspire to:

- grow the Charitable Company's innovation culture
- support the translational and entrepreneurial opportunities that arise from Sanger research
- establish the Campus as a leading location for innovative genome and biodata businesses to benefit from, and contribute to, the exceptional Campus intellectual capital.

Essential to our success is the creation of a diverse and strongly integrated Genome and Biodata community with free-flowing exchange of perspectives across organisations and sectors.

Achievements and Performance



Strategic Report

i) The Sanger Institute

In October 2021 we entered a new quinquennium, and with it came a focused scientific strategy for the next five years. Each of our five Scientific Programmes developed their strategies aligning them to the organisational mission and vision, developing ambitious, innovative and large-scale plans.

During 2022, in part due to delays caused by the pandemic, we conducted a large-scale Faculty recruitment process. This resulted in us successfully confirming seven new appointments and two promotions, reflected across all three levels of Faculty seniority and the five scientific Programmes. Our new recruits will join us over the next few years (some already on board and conducting their science), where they will further strengthen the diversity of our science, bring new skills and intellectual value and help shape the future of the organisation. There were however a number of positions where we were unable to recruit successful candidates, where the organisational alignment or scientific vision was not found. In these cases we will review the recruitment strategy and look again in the following year to recruit. The

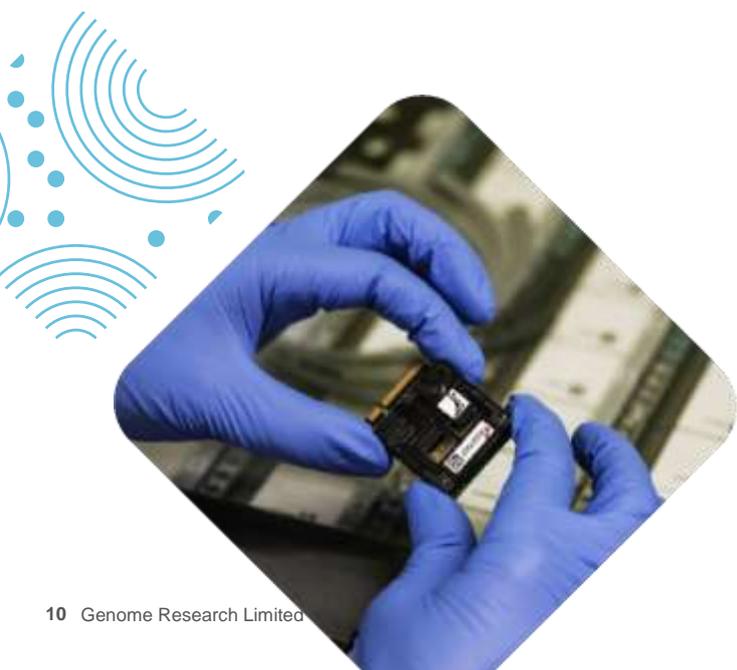
delay in recruitment is not expected to impact our scientific strategy.

We continue to acknowledge the invaluable work of our technicians to deliver our science at scale, we have been proud signatories of the Technician Commitment to develop the talents and careers of our staff since 2018. In June of 2022 we ran our first Sanger Technical Careers event, a week of bespoke talks, workshops and networking events for our Technician community, part of our continuing ambitious 3-year plan.

Our technicians and technical experts are just one of our diverse communities, making up over half of the staff in the organisation. Diversity is of huge importance to us, and we further cemented our commitment in this regard by launching the first Wellcome Sanger Excellence Fellowship. The three year post-doctoral fellowship is open to Black early career researchers and is designed to specifically support them to develop their portfolio of research and thrive in the field of UK genomic science. The fellowship was developed in close collaboration with internal and external experts including senior Black academics and Black-led community groups, who have hugely contributed to and helped shape the overall Annual Report and Financial Statements for Year Ended 30 September 2022 approach. Applications opened at the beginning of 2022 with successful candidates joining the Institute in September.

Science at the Sanger Institute always will be an international endeavour, and this year saw the launch of the Genomic Surveillance Unit (GSU) designed to support partners, particularly in low and middle income countries, around the world. The GSU will build to support these partners by developing, running and maintaining open products in genomic surveillance, promoting it as a tool for local infectious disease control and pandemic preparedness. The not-for-profit unit sits within our Associate Research Programme and its current focus is on malaria parasite, malaria vector and COVID-19 surveillance.

Trustees' Report



As the year progressed we unfortunately weren't free from COVID-19. As public testing was scaled back we continued with our genomic surveillance efforts at a reduced rate, continuing to add to the phenomenal resource of global COVID-19 genome sequences (20% of the global total). As our staff who had been working from home began to return to campus, we faced fresh challenges of hybrid working, effective space management and reinvigoration of the campus and scientific communities. But with the challenges have also come opportunity, 2022 saw the creation of our Respiratory Virus and Microbiome Initiative (RVI). The RVI, housed in our Parasites and Microbes Programme, has been established to utilise the wealth of COVID-19 samples taken to better understand community spread, the respiratory microbiome and demonstrate the value of genomic surveillance.

A continuing core principle of Sanger science is large-scale data production which cannot easily be conducted elsewhere, which is embodied by our contribution to the UK BioBank whole genomes project. Sanger sequenced nearly 250,000 whole human genomes, of 500,000 genomes sequenced in total, producing the world's largest dataset of its kind. In November 2021 UK BioBank released 200,000 genomes giving researchers opportunities to better understand the genetic determinants of disease and accelerate drug discovery.

Key Performance Indicators

Within the new quinquennim, GRL will annually assess itself against four key metrics relating to the the four major challenge areas below:

- *Remain a global research leader - we assess our scientific impact through analysis of bibliometric data in relation to our research outputs, data sharing and collaboration.*
- *Recruit and retain our thought leaders - 7 new faculty members have been recruited in the year and 2 further positions have been fulfilled through internal promotions, against a target of 10 new faculty (see page 10).*
- *Maintain the level and scale of funding - in order to maintain our position as a leader in our field we need continued investment through Wellcome and our external collaborators.*
- *Maintain our position at the leading edge of technology - we conduct regular external facing reviews against our current catalogue of sequencing infrastructure, to ensure we are considering the right technologies for the future. The five year deliverables are designed to stretch our scientific capabilities.*

Five year deliverables

Each of our scientific Programmes have developed a five year plan comprising of two high level projects with three large scale aims each. Each of these aims have specified

deliverables, some of which contribute to the broader techniques evolve and the global genomics environment changes, at all times ensuring the science remains largescale and at the forefront of genomic science.

In order to support the operational delivery of these scientific ambitions, GRL has embedded an Objectives and Key Results (OKRs) approach during the year following a successful pilot in 2021. OKRs provide a standard approach for operational team objective setting designed to focus and align efforts towards delivering the organisation's strategic mission. This is achieved by engaging with scientific colleagues to understand their operational requirements, then identifying priority objectives and setting measurable targets across all operational departments. Each quarter Scientific Programmes highlight their top priority areas which feed into the OKR process. Across our operational teams we track and report our Key Performance Indicators to ensure we are delivering the operational support to the science that is needed to achieve our overall mission and key deliverables. These include KPIs around areas such as sequencing lanes completed, sequencer utilisation, campus attendance, IT storage capacity and utilisation, utilities hedged and energy saving targets.

Scientific Impact

The Sanger Institute uses genome sequences to increase understanding of human, pathogen and eukaryotic biology in order to improve health. The science at scale that underpins Sanger cutting-edge research means that the Institute can take on projects that tackle some of the most difficult challenges in genomic research. Once these ideas and technologies become mainstream, Sanger science will flex and stretch into new areas. Research, innovation, and learning and engagement activities all contribute to achieving the GRL mission, underpinned by nine ambitions where the GRL aims to make an impact:

- To conduct leading-edge research.
- To develop new scientific leaders.
- To lead on major challenges.
- To support an ecosystem realising benefits.
- To change clinical practice.
- To share our expertise.
- To enable public dialogues.
- To champion an open research culture.
- To shape standards and policy.

Our scientific impact is monitored through a variety of bibliometric indicators which assist us in determining the relevance and uptake of our discovery research within the scientific community.

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institute deliverables shown below. These are monitored
within the programmes and are expected to change through
the five year period as technology and scientific

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Bibliometric Analysis				
Metric	9 months to 30 Sep 2022	Year Ended 31 Dec 2021	Year Ended 31 Dec 2020	5 year average
Field-Weighted Citation Impact*	5.31	3.79	4.13	3.84
Scholarly Output	406	616	581	3,102
Citations per Publication (mean average #)	3.3	16.9	48.1	52.1
Output in Top 5% Citation Percentiles (field-weighted)	18.2%	21.6%	25.6%	24.0%
Output in Top 1% Citation Percentiles (field-weighted)	6.7%	7.6%	10.3%	9.7%

Source: SciVal October 2022

*Ratio of citations compared to global average in field of genomics. 1= global average.

Research Outputs

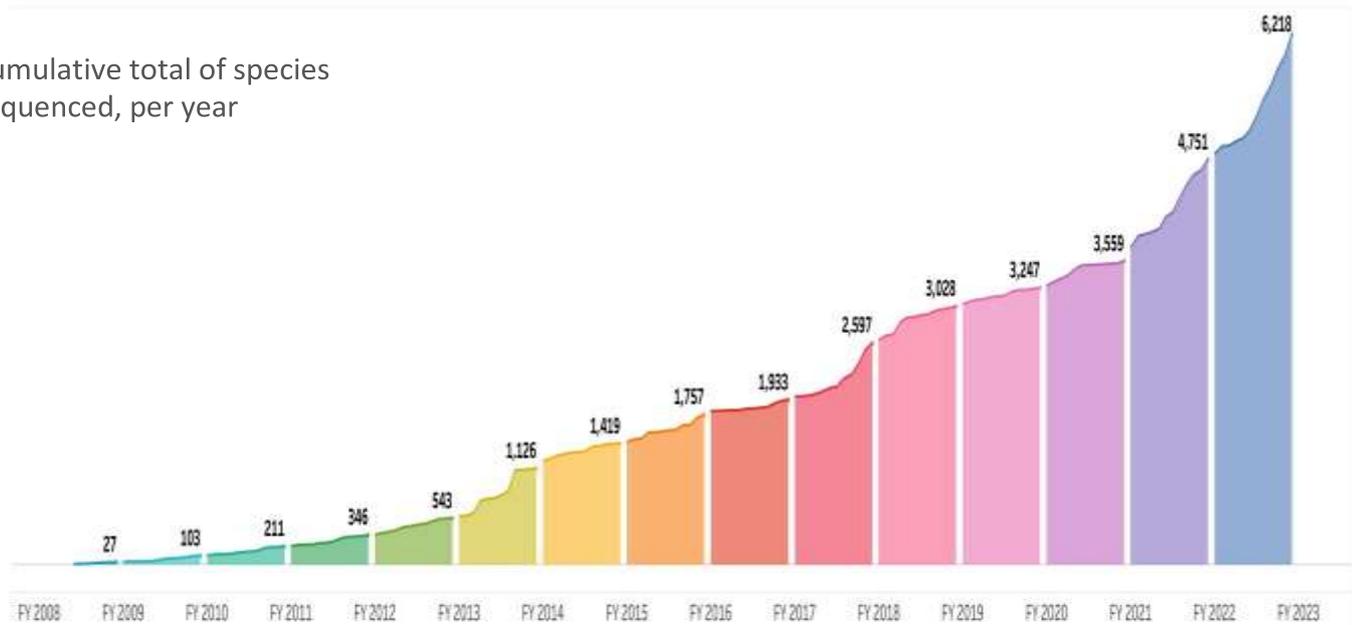
Genomic research is at the core of the Sanger Institute. Researchers focus on identifying new frontiers of biology to be explored through genome sequences. By being experts in aggregation, analysis and interpretation of genomic data at scale, Sanger researchers are able to contribute foundational knowledge for the academic community. New findings and data are commonly shared through a variety of mechanisms, commonly in a form of publications in peer-reviewed academic journals. Our practice of monitoring publications focuses specifically on research articles and reviews as these are the publication types that best reflect primary research carried out by Sanger Institute authors. Using a set of five publication and citation metrics (also called bibliometric indicators) to help evaluate published research, we benchmark ourselves against other organisations with similar scientific profile or structure, and monitor long-term trends in order to understand what constitutes a 'good' performance for the Institute. The publication data follows a calendar year reporting period. The table above shows the data for the 5-year average (2017-2021), the data for the most recent complete data collection period (the year ended 31 December 2021), and the data for 2022 so far.

Genome sequencing at the Institute has generated over 5.5 Petabases of sequencing data in the last financial year; a lower but a more diverse output compared to the 14 Petabases sequenced in 2020-2021 and the 9.8 Petabases in 2019-2020. The volume in previous years was largely driven by the Sanger Institute's ongoing contribution to the global genomic surveillance efforts, with Sanger delivering the largest SARS-CoV-2 virus sequencing operation in the world, as well as the sequencing of c. 225,000 whole genomes from UK Biobank, which was completed in late 2021.

In the last financial year, 1,467 (2021: 1,192) different species were sequenced for the first time (see graph below), reflecting the diversity of the work undertaken at the Sanger Institute, and bringing the cumulative total of different species sequenced to 6,218 by the end of year.

The diversity of genomic data continues to grow, and through the Tree of Life Programme we are rapidly increasing the number of high quality reference genomes of eukaryotic species available to researchers across the world. The Programme has established and refined its high throughput processes to produce 75 genomes a week, contributing to the annual organisational total of 422 species sequenced and deposited in the [Genomes on a Tree](#) database to enable quick and open sharing. Each species sequenced also has a [Genome Note](#), a brief

Cumulative total of species sequenced, per year



Key Bibliometric findings - research outputs, data sharing and collaboration

The Sanger Institute aims to maintain its position as a world-leading genomics research centre. The citation metrics provide evidence to support this position, and serve as a measure of impact that the foundational discoveries arising from research at the Sanger Institute have within the wider scientific community. The reporting includes data on publications on which the Sanger Institute authors take a position of the first or last (or in many cases, both) authors on research articles. This data is a more accurate indication of Sanger authors leading the research. The analysis provides justification in considering the Sanger Institute a global centre of genomics research, with Sanger's publication volume and citation rates consistently among the highest compared to our comparators, despite comparatively small faculty size.

Scholarly output:

- The number of research articles and reviews by Sanger Institute authors has increased slightly in 2021 compared to the previous year.
- The articles where Sanger authors are leading the work, increased by 19% from 160 to 197

Field-Weighted Citation Impact (FWCI):

- Articles and reviews published by Sanger Institute authors are 3.84 times more cited than the world average, this position has remained stable
- Publications in which Sanger authors are leading the work (as indicated by the first and last author positions) are 4.65 times more cited than the world average.

Average citations per paper:

- The 3,102 articles and reviews published 2017-2021 have accumulated 161,529 citations overall, with a mean of 52.1 citations per paper during this period.
- First and/or last author Sanger papers received an average of 47 citations per paper for papers published between 2017 and 2021.

Outputs in the top 5% citation percentiles:

- On average, 24.0% of all Sanger Institute articles and reviews published between 2017 and 2021 are among the 5% of the world's most cited publications. This is similar to the previous rolling five-year average (24.2 per cent between 2016 and 2020), with slight fluctuations expected as new citations continue to be accrued.
- On average, 29.7 per cent of publications in which Sanger authors are leading the research as first and/or last authors published between 2017 and 2021 are among the 5% of the world's most cited publications.

Outputs in the top 1% citation percentiles:

- 9.7 per cent of Sanger articles and reviews published between 2017 and 2021 are among the top 1% of the world's most cited publications. The proportion of the Sanger Institute's outputs among the top 1% most cited publications is relatively stable at around 10 per cent since 2017, apart from a decrease to 7.6 per cent in 2021, which is anticipated as citations take time to accrue, with the most recent publications usually having the fewest citations.
- The proportion of Sanger-led articles that are among the world's top 1% most cited papers is higher at 12.5% in the five-year period between 2017 and 2021, and 9.9% in 2021 alone.

Collaboration:

- The data shows that international collaboration is one of the core strengths of the Sanger Institute, with a long tradition of producing research findings in internationally collaborative networks.
- The proportion of research articles published as a result of international collaboration increased to 84.1% in 2021.
- The proportion of publications authored with industry partners is also high at average 17.7%.
- Over the course of the past five years, Sanger authors have increasingly led the work within international collaborations, as indicated by the first and/or last author positions on the research articles, from 70.9 per cent in 2017 to 83.8 % in 2021.

Trustees' Report

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scientific article that describes the genome sequence, to announce the availability of the genome and credit those involved in its generation

Data and Resource Sharing

The research conducted by the Sanger Institute continues to result in a vast amount of data produced, which is shared openly, widely and as effectively as possible. Open access to our data and resources has been championed from the start, with use of Data Access Agreements to safeguard ethical use of the human data.

The Sanger Institute has approved 2,090 different Data Access Agreements (DAAs) for human data since 2015. 206 of these had been granted in 2021-2022 with 28 countries as seen in the map below. Data requests come from all over the world, with the majority from organisations based in the USA and the UK.

Requests for data tend to come mostly from universities and research institutes (combined 87 per cent, a 7 per cent increase from last year) and the rest from hospitals and commercial entities.

The Sanger Institute is committed to sharing its data, as well as the resources, protocols, materials and publications it produces. Rapid and open data sharing strategically supports both the GRL and Sanger Institute missions by enabling research and accelerating translation.

We are continually balancing our resources, and our focus remains on the core goal of large-scale data generation. In developing data release strategies we are mindful of this and the potential burden of supporting and updating databases, tools and software. Much of Sanger Institute data is deposited with our strategic partner EMBL-EBI who curate, organise and present data. Since 2014, the Sanger Institute has contributed 493 studies and 665 datasets to the EMBL-EBI European Genome-Phenome Archive (EGA). These have been used in 494 publications that have received 19,123 citations combined. Further, the Sanger Institute

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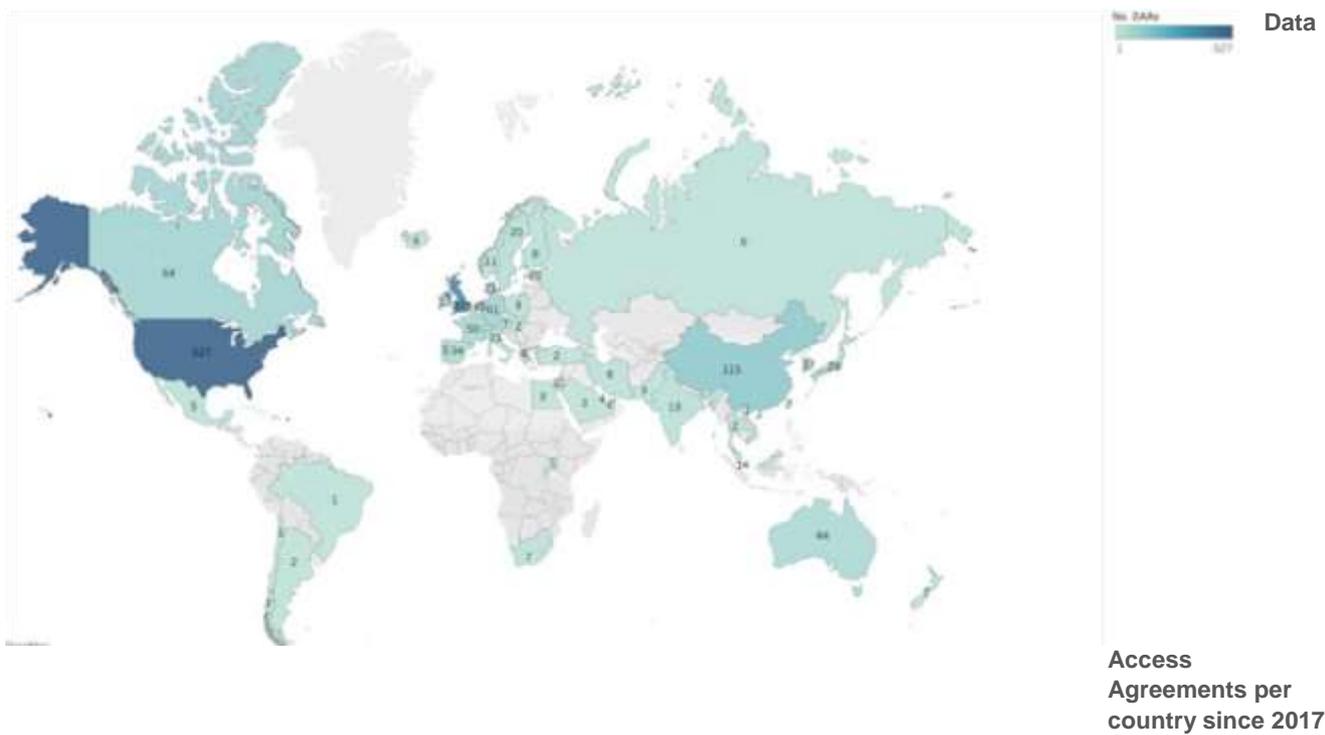
contribution to the EGA accounts for 9 per cent of all studies and 8 per cent of all datasets shared on EGA. This equates to over 609,253 files downloaded from the PyEGA3 from Sanger datasets from 2014. On average 107 million requests are made to EMBL-EBI websites every day.

The Sanger Institute also creates publicly accessible databases and organised data resources. These include DECIPHER, COSMIC. DECIPHER is an interactive webbased database which incorporates tools designed to aid the interpretation of genomic variants in rare diseases, over 300 centres across the globe contribute genomic and patient data into DECIPHER which has over 43,800 openaccess patient records. COSMIC, the Catalogue of Somatic Mutations in Cancer, is a comprehensive database of cancer mutation data and analytic tools. COSMIC have recorded more than 23 million mutations and 6,800 precise forms of human cancer from 29,000 peer reviewed publications and nearly 40,000 whole genome screen samples. The COSMIC has been cited more than 20,000 times, and has 50,000 academic and commercial registered users with 30,000 users/month visiting the website.

Sanger Institute scientists generate a wide range of biological resources to support research conducted by our Faculty or collaborators. All are subsequently made available for the wider research community to use, together with relevant and appropriate metadata. Biological resources include normal and cancer organoids and human iPS (induced Pluripotent Stem) cells.

The number of human iPS (induced Pluripotent Stem) cells are banked at two resource repositories, European Collection of Cell Cultures and European Bank for induced pluripotent stem cells, reaching 797 and 263 respectively, enabling distribution of cell lines to academic researchers.

The Cell Model Passports (CMP) resource has information for over 2000 cancer cell line and organoid models as well as access to various genomic and functional datasets including CRISPR and drug sensitivity screens, mutational data and proteomics. The number of organoids created at



the Sanger Institute as part of the Organoid Derivation Project has reached 230, of which the datasets for 145 have been made available as a resource for the scientific community via CMP. These have been accessed by researchers from 141 countries, through 27,000 site visits to the website (up 116% from previous year). In addition, 38 of these organoid models are commercially available as a biological resource to the scientific community. The Genomics of Drug Sensitivity in Cancer, a resource for therapeutic biomarker discovery in cancer cells, which can be used to identify patients most likely to respond to anticancer drug, has screened over 500 compounds for genomic markers predicting drug response.

To deliver truly seamless sharing of genomic and clinical data, we actively support the work of the Global Alliance for Genomics and Health (GA4GH) to create the protocols and frameworks needed to open up the world's genomic databases to the global scientific community. Through innovations such as GA4GH Passports and Data Use Ontology, the process to gain access to much-needed data will now take a matter of days instead of weeks.

Funding

In order to remain a global research leader we aim to, as a minimum, maintain the same level of funding year-on-year, after accounting for inflation. In order to achieve this we aim for at least 20% of our grant funding to be generated from third party or non-core Wellcome awards.

Our grants team work closely with our scientists to identify funding opportunities through charitable foundations, collaborative research institutes and commercial organisations which align with our scientific objectives. We do not undertake any fundraising activities in the form of approaching individuals for donations.

	Year ended 30 September 2022 (£'000)	Year ended 30 September 2021 (£'000)
Wellcome Core Grants	92,464 (73%)	109,662 (80%)
Wellcome Other Grants	3,710 (3%)	4,181 (3%)
Third Party Grants	30,704 (24%)	23,320 (17%)
TOTAL GRANTS	126,878	137,163
Major Contracts	50,639	66,900
Other income*	8,423	17,395
TOTAL INCOME	185,940	221,458

* Other income in the year ended 30 September 2021 included investment gains of £8.1m

Commercial contracts, such as the UK Biobank whole genomes project and COVID-19 sequencing, allow us to expand our technological capacity and conduct large scale research, however GRL's mission is to remain a global research leader, and as such there is no formal target in place in respect of commercial arrangements.

At the start of each financial year, we set budgets based on our scientific objectives for the following period. While spend in the year does not provide a good indication of the impact of our science, it does provide some insight into how successful we have been in conducting our planned research. In the year ended 30 September 2022 we spent 88.1% (2021: 93.6 %) of our core budget for the year.

Current year spend was behind budgeted spend primarily due to delays in purchasing capital equipment.

Research Training

The Sanger Institute provides an exceptional intellectual environment and infrastructure for training and inspiring the next generation of leaders in genomics research. In order to capture the broad range of career outcomes in a systematic way, the Sanger Institute has completed the first round of the Postdoctoral Fellow career tracker. Over time, this annual survey will provide a rich longitudinal data source to help identify the facilitators and barriers to career progression, enable a better understanding of the career trajectories of our former postdoctoral fellows, and the findings will be used to improve the programme for future cohorts.

The Institute currently has over 100 postdoctoral fellows, on time-limited appointments of 3-5 years, from 30 countries supported by core funds and funding agencies. The Sanger Institute extended the contracts of some postdoctoral fellows to alleviate the challenges experienced due to the COVID-19 restrictions.

Graduate Programme

The Graduate Programme is a key part of the overall strategy of the Institute, with the goal of producing a constant flow of motivated scientists who have the necessary core skills, experience and outlook to become future leaders in genome research. The Sanger Institute is a University of Cambridge Partner Institute. All successful Sanger Institute MPhil and PhD students graduate with a degree from the University of Cambridge.

The Graduate Programme currently funds 12 PhD students per year on our 4-year PhD programme. It also funds two of the 10 fellowships per year organised by the University of Cambridge Wellcome PhD Programme for Clinicians, which provides medically qualified individuals with genomics training. In most cohorts, there are also a small number of externally-funded students from several other University of Cambridge-based PhD programmes. In its one-year MPhil programme, it funds three MPhil students per year from low- and middle-income countries to enable the students to move on to competitive and high quality PhD programmes. Carried out in close partnership with multiple research organisations, the selection process for the MPhil programme aims to strengthen the partnerships with these institutions, currently 15, which include the Wellcome Overseas Programmes, MRC overseas units, the home institutions of Sanger International Fellows and the icddr,b research institute specialising in infectious diseases. Including those funded by third parties, we currently have 73 PhD students and 4 MPhil students from 29 countries.

Sanger PhD students have maintained an average four-year submission rate of 89% over the past 12 years (93% in

2021/22), far exceeding the 70% threshold expected by the Research Councils. Our most recent submission data takes into account the fact that around half of our students have been granted official submission deadline extensions due to the effects of the COVID-19 pandemic on their research. The analysis of the last five PhD cohorts demonstrate an exceptional publication record, indicating that research produced by Sanger graduates is of high interest to the wider academic community.

The data from the Sanger Institute's PhD and MPhil programmes on the career outcomes indicates that it consistently meets its goal of nurturing the next generation of leaders in genome research. The Graduate Programme has consistently remained highly attractive to prospective students from all over the world, even those who have sought their funding elsewhere, which suggests a continuously high level of interest in Sanger science.

Scientific Operations

We deliver high-throughput, large-scale biological research, which is a defining characteristic distinguishing our science from that of most research institutes and universities. Generating data and resources for conducting science at this scale is critically dependent upon major core facilities and high-throughput processes organised into complex platforms and pipelines. These require substantial infrastructure, subject matter experts and professional organisation and management.

The Institute currently has three core platforms:

- Sequencing facility
- Cellular Biology facility
- IT

In May 2019, the Institute announced the strategic decision to close the animal facility and mouse pipelines, and to deliver future animal work, outsourced, through partnership with other organisations. The closure was completed in September 2021.

COVID-19 Genomics UK Consortium (COG-UK)

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 capability. Virus genome data are combined with clinical and epidemiological datasets in order to help to guide UK public health interventions and policies. Subsequent analyses enables evaluation of novel treatments and non-pharmaceutical interventions on SARS-CoV-2 virus populations and spread, and provide information on introductions versus community transmissions and outbreaks.

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This data allows researchers to identify and evaluate emerging genetic changes and understand how those variations affect the ability of the virus to transmit from person to person, and cause severe forms of the disease. The Sanger Institute is providing a centralised service for large-scale genome sequencing of samples from the 'Lighthouse Lab' National Testing Centres, as well as providing support to the regional sequencing labs and

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areas not covered by regional labs. Since March 2020, when the project was initiated, Sanger has sequenced more than 2,500,00 SARS-CoV-2 samples to the end of September 2022.

ii) Wellcome Connecting Science

Over the past year we have restructured and strengthened our senior leadership team, including recruiting a new Associate Director of Learning and Training, to lead our Learning and Training programme. Responding to the changing nature of the pandemic, we have gradually returned to in-person events on the Wellcome Genome Campus, while maintaining some aspects of digital and hybrid working and delivery.

Learning and Training: In collaboration with the COVID-19 Genomics UK consortium (COG-UK), we have developed a new training programme on SARS-CoV-2 genome sequencing (COG-Train) aimed at researchers and public health professionals in low and middle-income countries. COG-Train uses a mixed training model, combining short online training modules, with virtual courses and distributed classrooms, in order to facilitate an increase in global genome sequencing and analysis capacity, reduce sequencing inequality, and enhance pathogen surveillance.

In addition to COG-Train, we have developed and delivered 14 (2021: 21) research conferences (11 fully online and 3 hybrid, combining online and in-person attendance); 19 (2021: 22 online) training courses (12 in-person on the Wellcome Genome Campus); and 9 (2021: 10) (all virtual) global training events for participants in low and middleincome countries. Collectively, these activities have reached around 50,000 individuals, with the majority accessing our online training on bioinformatics and data analysis.

Engagement and Society: We have begun a new collaboration with the University of Cambridge, funded by the Kavli Foundation, to establish the Kavli Centre for Ethics, Science, and the Public. The new Centre is led by Professor Anna Middleton, and offers opportunities for new initiatives and projects that are of strategic interest to all the Centre partners. Our schools and public programme is also returning to in-person activities, and we have been able to host visits from around 350 school students on the Campus. We have also developed and launched an online course for teachers, Genomics for Educators, to share strategies and techniques for teaching genomics in and outside of the classroom to enrich how students learn. Over a thousand teaching professionals enrolled on this course.

iii) Enterprise and Innovation

The Sanger Institute's Technology Translation team identifies, nurtures and de-risks novel research ideas that have the potential for societal impact beyond publication. Its goal is to attract partners with the resources and capabilities **Trustees' Report** to then deliver products and services.

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The Institute has a culture and history of scaling technologies in a manner that supports innovation. Some of these capabilities have become spin-out companies that are making a positive impact in the healthcare sector. As at 30 September 2022 we held shares in two spin-outs, Congencia Limited and Microbiotica Limited, held as programme related investments:

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In April 2021, our first ever spinout, Kymab Limited, was sold to Sanofi Inc, for a total of \$1.1 billion, with a potential for additional payments up to \$350 million upon achievement of certain long term milestones. GRL received £8.7 million to date in relation to the sale of this investment, including £0.6m in the current period.

Congenica and Microbiotica continue to raise funding and develop their platforms, having navigated the challenges of the pandemic. However, another of our investments, VHSquared, went into liquidation earlier in the year following significant intellectual property challenges that prohibited further in house development of their key programme.

In October 2022 GRL entered into an agreement to spin out Mosaic Therapeutics, a wholly owned subsidiary as at 30 September 2022 (see page 20, post balance sheet events). The company leverages Sanger's expertise in generating and analysing large datasets from the manipulation of tumour models in order to identify new approaches to targeting difficult to treat cancers.

COSMIC (Catalogue of Somatic Mutations in Cancer), a team within GRL, which has a commercial licensing model that charges company for access to the COSMIC database whilst maintaining free access to all not-for-profit users, went through a process in the year to consider options to establish COSMIC as a subsidiary. A decision has been made to retain COSMIC operations within GRL, in order to continue developing its scientific reach.

Interest from Genome and BioData companies seeking to co-locate on Campus and be part of our growing community of innovative businesses in this space remains steady with competitive applications for the space which became available this year. We are working towards the Biodata Innovation Centre (BIC) returning to 100% capacity (89% at 30 September 2022) by September 2023, with up to 13 organisations from the private and public sector. Our tenants, from Campus spin-out companies, start-up companies, through Genomics England Limited activities, to organisations from mainland Europe and Asia, represent diverse aspects of the genomics and biodata value chain. Feedback continues to be exceptionally positive, however we are aware that companies continue to review their working arrangements as a result of COVID-19 with some seeking a reduction in space. Over this year almost all of the enquiries we have received are from companies seeking both office and laboratory space. At the current time we are unable to offer laboratory space to third party organisations, limiting the potential for continuing to diversify the community.

We have continued our focus on building a sense of community within the BIC and stimulating engagement with the wider Campus and continue to review how our value proposition will evolve post-Covid. These initiatives are being spearheaded by our new Client Relationship Manager and our Programme Manager for Entrepreneurship and Events. Our efforts to inspire Campus entrepreneurship are building momentum through our Startup School for Genomics and Biodata a four-month virtual but highly interactive programme enabling them to develop both entrepreneurial skills and 12 new ideas with the support of genomics and biodata

entrepreneur role models and guided by expert mentors. This year a second cohort of 26 participants (2021: 24) from across both Campus research institutes completed the programme. Some programme alumni from both cohorts continue to develop their own genomics and biodata opportunities, whilst a number of others are now exploring entrepreneurial career pathways within industry or start-up companies.

Statement by the Trustees in performance of their statutory duties in accordance with s172(1) Companies Act 2006

The Board of Trustees of Genome Research Limited consider, in good faith, that they have acted in a way that would most likely promote the success of the Charitable Company, to achieve its charitable purpose, and in doing so have regard (amongst other matters) to –

- (a) the likely consequences of any decision in the long term,
- (b) the interests of the Charitable Company's employees,
- (c) the need to foster the Charitable Company's business relationships with suppliers, customers and others,
- (d) the impact of the Charitable Company's operations on the community and the environment,
- (e) the desirability of the Charitable Company maintaining a reputation for high standards of business conduct, and
- (f) the need to act fairly as between members of the Charitable Company.

As part of their induction, Trustees are briefed on their duties, either through the Charitable Company, or if they judge it necessary, through an independent advisor. Further details on how the Board fulfils its duties can be found in the governance, structure and management section on page 24. The Board receive regular updates on each of the areas below, and request presentations from management as required.

The Charitable Company has many stakeholders, however the Board consider the most significant to be its employees, its collaborators, the community and the Wellcome Trust.

Consideration of the consequences of decisions for the long term

GRL's vision is underpinned by a long term strategy for the Wellcome Genome Campus to become an international centre for scientific, business, cultural and educational activities emanating from Genomes and Biodata. The Board are required to approve the 5 year funding envelope, the annual budgets, any large or strategic projects, or significant diversions from the budget, such as the COG UK collaboration (page 16). In doing so they consider this in the context of Wellcome and GRL's long term strategy.

Engaging with our employees

The Sanger Institute's success is founded on the expertise and knowledge of its people. Our employee engagement strategy is based on four principles – that employees have

a voice, receive recognition, have a sense of purpose and are supported to grow and feel successful.

GRL have actively sought new ways for the Board to increase its engagement with employees during the year, and this is a key part of our strategy. In a year when our search for the next GRL Director has commenced, members of the Board have been closely engaged in supporting this process. Importantly, wider GRL have been linked into the consultants leading this search, so that our approach is transparent and our network spread as broadly as possible.

The Board continues to receive regular updates on our Culture Development Programme, including any key milestones delivered or progress made, and are actively engaged to provide input, comment or feedback.

GRL's Employee Partnership, comprised of elected representatives and the 'Your Ideas' portal are two of the ways in which employees can raise concerns and make suggestions for improvement. As a result of ideas raised in these forums, over the last year GRL has launched the green salary-sacrifice e-car scheme, launched the employee Sustainability Stars Awards to recognise employees' efforts in developing green practices and developed the new hybrid working model.

Refer to People Development and Engagement (page 27) for further details of how we have engaged with our employees during the year, and Health and Safety (page 26) for more about actions taken to support employees both based at home or on Campus.

Engaging with our suppliers and scientific partners

Collaborating with genomic scientists and researchers worldwide is fundamental to the scientific strategy of the Charitable Company. We work closely with our suppliers to share new discoveries and techniques, which ensures the latest technology is available to support and enable our scientific mission.

We agree payment terms with suppliers in advance that protect the needs of the supplier and the Charitable Company.

Our procurement policy is governed by our Purchasing Code of Ethics and we aim to ensure that our suppliers are treated fairly and impartially.

Engaging with the Wellcome Trust

GRL's sole member is the Wellcome Trust Limited, as corporate trustee of the Wellcome Trust and has the right to appoint directors to the GRL Board. Wellcome Trust is represented on the Board, which is chaired by its Director, Sir Jeremy Farrar. GRL receives funding from the Wellcome

Trust via a five year funding envelope which is aligned to Wellcome's long term scientific strategy. GRL provide regular reporting, both financial and non-financial, to Wellcome directly, and through updating their representatives on the GRL Board. GRL work collaboratively with the Wellcome Trust, sharing both scientific and operational expertise.

The impact of the Charitable Company's operations on the community and the environment We engage closely with our neighbouring communities on environmental issues including:

- Permissive path for local residents to enjoy the Wetlands Nature Reserve on site
- Local residents sit on the Wetlands Community Conservation Group that meets at least twice a year
- Liaise with local residents on parking and transport issues

Refer to the Environmental Statement on page 26 for further details.

Connecting Science works with both professional and public communities, with the aim of enabling everyone on this continuum to benefit from genomic science. The My STEM Futures initiatives support students from backgrounds historically excluded from STEM in completing a Youth STEMM Bronze or Silver Award, and develop a portfolio of achievements to support Sixth Form, university or workplace applications. In the past year the initiative has supported 100 young people from a range of racially minoritised backgrounds to work towards a Youth STEMM Award.

We have recently commissioned a historical research project to investigate the history of Hinxtion Hall (our conference venue) and the source of wealth that enabled its creation, particularly exploring any potential links with the transatlantic slave trade. This project is led by an independent researcher, and we will share its findings with the local Hinxtion community and the surrounding villages. This works builds on a small exhibition about the Hall and its journey from a family home to a centre of technological innovation, which has been installed by its entrance. An expanded online exhibition is also available, and both include extensive contributions by members of the local community.

Maintaining a reputation for high standards of business conduct

Sanger Institute's Research Policies are designed to provide guidance to help researchers navigate the legislation relating to their research and to ensure that research is ethical and legal. Our research should embody the core values of the Institute and Wellcome, reflecting our commitment to a research culture founded on honesty,

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integrity and respect in order to create an open environment of creative exchange of ideas and views. Researchers at the Sanger Institute have the responsibility to be aware of which Research Policies apply to their research and to ensure they and their teams are compliant with them. In October 2020, mandatory training was introduced for all employees, including Good Research Practice for all scientific staff. Further information regarding our research policies can be found on our website.

Financial review**Results**

This is the first year of the 2021-2026 quinquennium award from Wellcome which GRL can draw down as required to meet its objectives as set out in the 2021-2026 scientific plan.

The net surplus for the year, after other recognised gains of £149.9 million (2021: £67.3 million gains) was £153.4 million (2021: £81.0 million surplus). Other recognised gains have arisen due to the accounting requirements of the defined benefit pension scheme.

Income for the year totalled £185.9 million (2021: £221.5 million) of which 52% (2021: 51%) was provided by Wellcome. The Charitable Company has seen a decline in grant funded activity, primarily due to delays in planned sequencing and capital expenditure due to ongoing global supply chain issues. As a result, income from charitable activities has fallen from £137.2 million to £126.9 million. Following completion of the UK Biobank project at the start of the financial year, other trading income has fallen to £58.4 million (2021: £76.2 million) primarily comprised of income associated with COVID sequencing on behalf of the UK government (page 16). Investment income totalled £0.6 million (2021: £8.1 million), following the sale of shares of a programme related investment.

Expenditure in furtherance of its activities totalled £183.2 million (2021: £207.9 million). Net income for the year was £3.5 million (2021: £13.7 million net expenditure), arising as a result of profits earned on commercial activities resulting in unrestricted net income of £13.4 million (2021: £8.7 million), offset by net expenditure on restricted funds of £9.9 million (2021: £5.0 million net income). The net expenditure arose as a result of depreciation on assets for which the grant income has been recognised in previous years.

As at 30 September 2022 the Charitable Company had a pension surplus of £13.7 million (2021 £133.2 million deficit) representing the funding position of the scheme, recognised in the financial statements as a 'pension asset' on an FRS 102 basis. This position represents the difference between an assessment of the liabilities of the pension funds and the current value of their underlying assets. The fair value of scheme assets is in excess of the scheme liabilities. The amount of the surplus or deficit is subject to considerable variability because it depends on a valuation of assets at the year-end date and a range of actuarial assumptions impacting the liabilities.

In 2022 there has been a 2.90% increase in the discount rate assumption reflecting the increase in long-dated corporate bond yields. FRS102 requires discount rates to be based on

corporate bond rates of an appropriate duration, regardless of actual investment strategy and actual investment returns expected. The major assumptions used by the actuary are shown in note 8.

A full triennial actuarial valuation of the Genome Research Limited Pension Plan was carried out as at 31 December 2021. This valuation showed that the plan had a surplus of £2.9 million.

In April 2021 the Charitable Company announced that it was starting a consultation on a proposal to close the defined benefit pension scheme to further accrual. The closure took effect as of 1st October 2021. A gain on curtailment of £11.4 million was recognised in the year ended 30 September 2021, as a reduction in expenditure, there are no such gains in the current year.

Wellcome and GRL previously agreed with the GRL Pension Plan Trustee to put in place a Deed of Guarantee. The obligations of the Deed, guaranteed by Wellcome, are that GRL pays the necessary contribution as agreed with the Trustee and the Plan Actuary and that any deficit in the funding identified by a full actuarial valuation will be repaid over a period of five years or less. The Deed provides security to the pension scheme and allows the Pension Trustees to take a longer-term view when deciding their investment strategy.

As at 30 September 2022 there were £28.1 million capital commitments contracted but not accrued, including £1.4 million relating to conversion of the former Research Support Facility into a new logistics Hub and lab space, and £26.5 million in relating to the construction of a new building on Campus (2021: £3.0 million relating to the installation of new chillers across our campus buildings and a new modular building for sequencing). The Charitable Company has entered into an agreement with the tenant to cover the full cost of construction. The building is expected to be completed in early 2024. The commitment represents the proportion of the development work that is yet to be carried out. In December 2021, a decision was made by the project steering board to terminate the planned construction of the new modular building for sequencing.

The Charitable Company has made available a facility for its trading subsidiary, Genome Research Trading Limited ('GRTL'), to draw down cash in the form of a loan up to the value of £0.7 million, in order to provide working capital through the period of Campus closure as a result of the COVID-19 pandemic and until the Conference Centre can become profitable again. This is anticipated to be in the year ended 30 September 2023. As at 30 September 2022, £0.4 million had been paid to GRTL in the form of refunded gift aid.

Post balance sheet events

On 15 October 2022, Mosaic Therapeutics Limited ('Mosaic'), a subsidiary of GRL as of 30 September 2022, entered into an agreement to issue new equity to a partnership of venture capitalists. GRL retained a 10% shareholding in Mosaic, however the company is no longer considered a subsidiary or part of the wider GRL or Wellcome group of companies. **Reserves policy**

Total net assets at the end of the year were £196.5 million (2021: £43.1 million), after accounting for the pension surplus of £13.7 million (2021: £133.2 million deficit). As referred to above in the results section, this is due to the FRS 102 valuation of the defined benefit pension scheme. Total funds (excluding the pension asset) at the end of the year were £182.8 million (2021: £176.6 million).

The restricted income funds of £150.5 million (2021: £157.4 million) consist of capital funds for buildings and capital equipment, and a research fund. The year-end fund balances on the capital funds represent the net book value of the tangible fixed assets purchased from those funds. The balance on the year-end research fund represents restricted income funds available to spend in furtherance of its charitable purposes. The balance on the endowment fund of £0.7 million (2021: £0.7 million) represents funds for activities specified by the donor. The movement on reserves is shown in note 22 to the financial statements.

Unrestricted investment funds of £6.3 million (2021: £4.5 million) relate to gains on unquoted investments less amounts owing to staff in relation to these gains. Investments are measured at fair value and as such are subject to variability.

The unrestricted income funds of £25.3 million (2021: £13.8 million) represent funds generated from external sources that can be allocated at the discretion of the directors, including sequencing as a service, licence fees, royalties, tenant services and exchange gains and losses.

As the Campus activities develop, more activities will generate, and be supported through, unrestricted funds. As a result Directors consider that a low level of unrestricted funds is acceptable. As activities develop, Directors will establish a more detailed target. Wellcome provides sufficient funding to enable the Charitable Company to finance its general activities and meet its obligations as they fall due. This funding structure is reviewed every five years.

Expenditure policy

For planning purposes an annual budget is agreed with Wellcome. The GRL Board monitors the expenditure of GRL and provides oversight of the internal budgetary and financial control mechanisms in place.

Programme Related Investment Policy

GRL invests in spin-out companies, held as programme related unquoted investments, the objective of which is to maximise opportunities for scientific growth, over and above maximising financial gain on investment.

Pensions policy

GRL operates a funded defined benefit scheme and a defined contribution scheme into which both employee and employer contributions are paid. There is further disclosure in note 8 to the Financial Statements and in the results above.

Grant making policy

GRL works collaboratively with scientific organisations all over the world. As a result, we may sub-award funds to partner organisations who have the scientific expertise to help us deliver our research (see note 5). These awards are only made with the explicit consent of the funding body.

Going Concern

GRL's total net assets at the end of the year were £196.5 million (2021: £43.1 million). The Charitable Company has a pension surplus of £13.7 million (2021: £133.2 million deficit). The latest full funding valuation of the pension scheme indicated that the contributions GRL have made to date are sufficient to meet the requirements of the scheme. The Charitable Company had net current assets at the end of the year of £35.6 million (2021: £26.1 million).

The 2021-26 scientific strategy review was completed during the year ended 30 September 2021, and an amount of £560.0 million was agreed by the Wellcome Board for the five year period, representing the budgeted cost of the scientific plan at that time. Due to delays arising from the COVID-19 pandemic, an interim award was granted for the period 2021-23 and the balance was formerly awarded in November 2022, including an additional allowance for power inflation of £15.0 million.

The extraordinary inflationary pressures arising primarily from the war in Ukraine, and other external factors such as Brexit and the COVID-19 pandemic, since the date the award value was approved, have cast doubt on GRL's ability to deliver the scientific plan within the awarded level of funding. Management have sufficient discretion over the spend to ensure expenditure remains within budget over the five year period without further support, and have identified cost

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saving opportunities to achieve this, including delaying construction projects; however it is still possible that budget savings would need to be achieved through the reduction of scientific activities, if insufficient savings are made elsewhere.

GRL do not commit to set levels of activity on third party awards. In the event that we wished to support a study beyond the terms of the grant, we would only do this if there were sufficient budget in the core award. Trading contracts are agreed on commercial terms, in such a way that, as a minimum, all costs are recovered and GRL is not exposed to significant working capital deficits.

In assessing whether the going concern assumption is appropriate, the Trustees take into account all available information which is at least, but is not limited to, twelve months from the date when the financial statements are authorised for issue. After considering the 2022-23 budget

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and strategic plan for 2021-2026, income under trading contracts and the 5 year award from Wellcome for 2021-2026, the Trustees are satisfied that it is appropriate to adopt the going concern basis in preparing the financial statements of GRL.

Plans for future periods

GRL and partner organisations at the Wellcome Genome Campus will continue to provide a foundation of genomic activity in the UK to maximise scientific, health, economic and other benefits from Genomes and Biodata. The core of discovery science will remain unchanged to deliver our mission during the Director transition in 2023 and the expansion of the wider Wellcome Genome Campus where The Sanger Institute and Connecting Science are based.

In October 2021 we started the new quinquennial plan of Sanger research, our roadmap to deliver cutting edge genomic science through 2021-2026.

The Sanger Institute's science will further explore genome variation, naturally occurring and engineered, which will enable us to:

- understand rare and common genetic diseases;
- understand how humans and pathogens evolve;
- chart the processes of human development and ageing;
- link genome variation to their phenotypic and functional consequences, from the single cell to the whole organism;
- discover the molecular interactions between pathogens and hosts; and
- produce reference genomes for all species of complex organisms found in Britain.

The Sanger Institute will continue to operate as a worldleader in genomic data generation, data interpretation and data analysis. Key areas of focus in the coming year are the continuation of the on boarding of our new Faculty scientists, establishing their groups and science as quickly as possible; continuing our international collaborative work through the development of the GSU and spearheading initiatives in areas such as equitable collaboration. We will continue to support our staff as we navigate the hybrid world, ensuring all of our people are supported, empowered, appreciated and acknowledged as we continue to collectively tackle some of the biggest challenges in life sciences.

Wellcome Connecting Science will continue to deliver a full programme, which addresses its key strategic objectives:

- Collaborate with diverse communities to transform engagement with genomics.
- Impact policy, practice and careers.
- Through our work establish the Wellcome Genome Campus as the recognised centre of excellence for learning and engagement with genomics.

We are planning to adopt an evidence-based approach to understand what aspects of the virtual and online delivery approaches we developed during the pandemic should be retained across our programme. As we return to in-person activity, we are aware that many of our public and professional participants hugely value face-to-face interactions and discussions; and we will seek to balance this with the increased reach that an online offer can deliver.

Working closely with the Sanger Institute, we are planning a fully refreshed public and community programme in the coming year, to complement our established schools programme. As part of this, we are working with Wellcome Collection on a new exhibition by artists Larry Achiampong and David Blandy exploring genetics, race, and identity in the 21st century.

In 2023, GRL might have the opportunity to spin-out two of its technologies. Both are genomic platforms that with investment could be developed and exploited to identify novel drug targets. EnsoCell focuses on using single cell mapping technology to compare healthy and disease tissue to identify critical disease-causing factors which could be targeted to alleviate pathology. FL86 would use technology developed at the institute to detect somatic mutations with high fidelity, enabling novel understanding of chronic disease at the molecular level that can be used to develop new treatment. There is confirmed interest from potential investors on both opportunities and negotiations are ongoing.

The outline planning permission granted to Wellcome for campus development offers the opportunity to significantly expand our close infrastructure of connected organisations and facilities and create a world leading hub of knowledge exchange and support.

Principal risks and uncertainties

The Directors have implemented a formal risk management process to assess financial and business risk and implement risk management strategies. They have identified the main risks GRL faces, prioritised them in terms of potential impact and likelihood of occurrence, and

Strategic Risks

Risk	Nature of Risk	Management of Risk
<p>Funding</p> <p>Deficit</p>	<p>Global inflationary pressures are affecting the real purchasing power of the funds we have including fixing our power contracts where possible, term supply arrangements and contracts and that funded by third parties is affected as a result. inventory holdings. We continue to forecast our This could delay capital expenditure, operational financial position regularly and make adjustments to and/or scientific projects and lead to changes in our plans to accommodate changes. We continue to priorities. work with all of our funders including Wellcome as our core funder to manage this situation but also are taking steps to improve our financial resilience by investing in efficiency and standardisation.</p>	<p>We use a range of measures to manage this risk available and both our core funded science and long funded by third parties is affected as a result. inventory to accommodate changes. We continue to priorities. work with all of our funders including Wellcome as our core funder to manage this situation but also are taking steps to improve our financial resilience by investing in efficiency and standardisation.</p>
<p>Supply Chain</p>	<p>In common with many healthcare and organisations around the world, the market supply issues have and reagents to ensure more resilience in our demonstrated our vulnerability to global supply arrangements. We have improved our approach shocks. The war in Ukraine has further increased to demand forecasting internally and with our key supply chain limitations and uncertainty and has suppliers introducing more structured triggers for had a direct impact on the availability of certain intervention and more active stock monitoring inputs. Due to the large-scale science conducted across the full range of products used by the at GRL we are heavily dependent on the smooth organisation. operation of our supply chains to ensure continued operations and production of quality scientific output.</p>	<p>In order to ensure continued operations we have scientific adapted our approach to key consumables post COVID-19 We continue to use a category management approach to procurement and have good long term relationships with many of our key suppliers.</p>
<p>Cyber Data Security</p>	<p>The threat landscape around Cyber security is continually increasing and GRL is not exempt and experience of our in-house IT department, from the risk that a major cyber security breach could cause a major disruption to services, disrupt our users, systems and/or data. of responsibilities, policies and other controls have strengthened our resilience, and we have run Cutting edge science requires cutting edge exercises at operational, executive and Board level scientific computing capabilities. We are mindful to test our responses. of the age and design of our Data Centre and how this may impact upon our flexibility to adopt A long term strategy has been developed to provide new capabilities.</p>	<p>To manage this risk we rely heavily on the skills and supplemented with external support and expertise, and the training and awareness of our staff. Reviews a more flexible IT environment going forwards and we make continual improvements to the Data Centre's resilience.</p>
<p>People</p>	<p>Cutting edge science requires GRL to attract, and develop a diverse range of talented maintaining the right culture within the organisation. people, including the finest scientific brains Culture is widely communicated and understood, with interests in new areas of science within the field. The recruitment environment and is reinforced through integration with employee genomics processes, such as recruitment, promotion and has become more challenging across all performance review. We have continued to evolve functional areas as a result of Brexit, the our working practices to adopt a "new normal" as a COVID-19 Pandemic, the inflationary economic result of the pandemic, balancing the flexibility often environment, and the challenges of adapting to expected with the collaborative needs of campus. post-pandemic approaches to work. We offer extensive staff support, through dedicated networks, support and ongoing monitoring of The absence of the necessary supportive, data, in order to be inclusive to all, and so that inclusive and collaborative culture; an our staff represents the diverse population local to inappropriate faculty model or PhD programme; Cambridgeshire. inadequate communication or a deficiency We have increased our staff VISA and residency in reward structure could negatively impact application support and continue to monitor recruitment, retention and developmen emerging requirements as regulations change.</p>	<p>Management have focused on creating and retain and we make continual improvements to the Data Centre's resilience.</p>

		Management of risk
Implementation of Innovative Technologies	<p>Since both science and the technologies used within GRL are constantly evolving, we need to ensure that we proactively seek out and implement innovative technological solutions to maintain the novelty of our research. Failure to do so could inhibit our reputation as a world leader, and subsequent appeal to key scientists, funders and commercial partners.</p>	<p>Continue to scan the markets for new technologies serving our technology requirements, adopt them when they become available, and build on close links with suppliers who may be able to develop technologies with us that will meet our future requirements.</p> <p>Take advice from our International Scientific Advisory Board and collaborate with other Institutes and bodies to ensure we remain at the forefront of science. With support from our scientists, perform a research and development review to define future strategy and develop new ideas, areas of research and governance structure.</p>
Campus Development Implementation of Innovative Technologies	<p>GRL is a world leading Research Institute in genomics and aspires to build a close infrastructure of connected organisations to create a world leading hub of knowledge exchange and support. Urban and Civic are working on the Campus Master Plan for an expanded Campus incorporating land over which Wellcome has outline planning permission and campus development oversight will transition to new governance arrangements. There is a risk that appropriate organisations do not join the expanded Campus and so that the Vision is not achieved.</p>	<p>Wellcome has articulated support for academic discovery research on the new Campus. In addition, the Campus Gateway policy and process was embedded into the section 106 agreement with the local planning authority for the Campus expansion. This ensures that the scientific theme of 'genomes and biodata' continues to be supported.</p> <p>The new governance body will review progress in attracting organisations to the expanded Campus and evaluate this against its mission, to ensure appropriate measures are taken to attract relevant organisations.</p>
Sequencing for Large Scale Datasets	<p>GRL has built a large amount of know-how, skill and experience in the field of genomics using its large-scale infrastructure. This learning has been employed on several large scale projects which have mutual benefits.</p> <p>Our large scale sequencing contracts with UK Biobank and the UK Health and Security Agency (COG-UK COVID-19 sequencing) are coming to an end and a sequencing contract with similar scale may not be secured to replace them.</p> <p>There is a risk that GRL may cease to be involved in sequencing large scale datasets which could have a negative impact on our position as a global leader in genomic data. This could also result in a loss of economic benefits and ability to process at scale.</p>	<p>The ability of Sanger to be involved with and deliver contractual large scale sequencing projects and willingness to sequence more is a recurring agenda when the Director's Office meet with multiple external stakeholders from pharma and biotech to funders including Wellcome and government department.</p> <p>GRL initiate its own large scale sequencing projects through core and third party funding which allows it to continue to develop technologies and lead and participate in major research projects which also cement the strong reputation of GRL.</p>

Reputational and Regulatory	<p>The Institute's reputation is central to its ability to attract and retain talent; collaborate extensively with other researchers, funders and suppliers; receive funding for, and achieve, our research aims. The COVID-19 pandemic has significantly increased public interest in genomic research; failure to capitalise on this may undermine GRL's mission. Failure to adhere to the highest levels of ethical behaviour or good research practice; failure to comply with legislation; or a poor working culture would all pose risks to GRL's reputation.</p>	<p>All staff within the organisation receive training in appropriate behaviour, including conflicts of interest and good research practice. GRL continues to proactively engage with health professionals and the general public through the Connecting Science division and influence the positive perception of genomics through publicising scientific breakthroughs in multiple forums including those accessible to the general public such as the press.</p> <p>GRL continues to invest and implement best in class data management systems that protect personal and individual data.</p>
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have identified means of managing and mitigating the risks. The Directors have reviewed the adequacy of GRL's current internal controls, including the ongoing improvement programme.

The Audit and Risk Committee reviews the risk management policy, risk processes and the Institute Risk Register throughout the year. It monitors progress against actions arising to address the risks identified. It reviews internal audit's own assessment of risk as part of the review and approval process of the annual risk-based internal audit plan. It also monitors the reports from internal audit and progress against the audit plan and the closure of management actions arising from its reports.

The Internal Audit opinion on the GRL control environment for 2020/21 was that Internal Audit was only able to provide limited assurance. GRL's control environment continued to mature during the Financial Year and Management demonstrated a good awareness of risks in their area. There are various initiatives being delivered by Management to address the improvement areas with respect to the design, effectiveness and resilience of the control environment. The 2021/22 internal opinion on the control environment will be reported in March 2023.

The major strategic risks currently facing GRL are detailed in the table on pages 22 and 23, including the impact of inflation on our objectives.

Credit risk is minimised by careful management of amounts due from external third parties. Wellcome has demonstrated its commitment to the support the Charitable Company financially through the award of a five year grant through to September 2026.

Structure, governance and management

GRL is a registered company, a registered charity and is governed by its memorandum and articles of association (refer to page 55 for reference and administrative details). GRL is a wholly-owned subsidiary of the Wellcome Trust and is considered to be so for accounting purposes. Its sole member is the Wellcome Trust Limited, as corporate trustee of the Wellcome Trust.

As at 30 September 2022, Genome Research Trading Limited, Mosaic Therapeutics Limited and GRL Construction Limited were 100% subsidiaries of GRL. Hinxton Hall Limited is a charitable company, and has only two members: the Wellcome Trust Limited as Trustee of Wellcome Trust and

GRL. Mosaic Therapeutics Limited successfully completed series A funding in October 2022 and is no longer a subsidiary of GRL.

Directors are appointed by the GRL Board, however, in accordance with the Articles, the Wellcome Trust Limited also has rights of appointment. All Directors receive an induction and ongoing training comprised of a mix of written information and meetings with key GRL people. The performance of the GRL Board will be monitored through regular effectiveness reviews and benchmarking against relevant governance codes.

GRL Board of Directors

The GRL Board has overall legal responsibility and accountability for all activities of the Sanger Institute and for all other GRL activity at the Wellcome Genome Campus. It approves the management structure and operating budgets of the Sanger Institute and Wellcome Genome Campus and approves major policies such as on intellectual property. In the year ended 30 September 2022, the GRL Board met on five occasions, four scheduled meetings and an additional meeting as part of the ongoing Board development, covering topics around inclusion and diversity.

A list of Directors is shown on page 55.

The GRL Board receives regular and emergent reports from its own committees and from GRL's management boards and committees, including:

- the Quinquennial strategy, award and review process;
- strategic proposals and projects, both science and campus related;
- plans and actions supporting equality, diversity and inclusion and the GRL culture;
- all matters reserved to the GRL Board for approval including, amongst others, changes to corporate structure, conflicts of interest and policies relating to conduct, certain appointments, major changes to pension schemes, the annual budget and the annual report and accounts.

GRL Executive Board

The GRL Executive Board (chaired by the Director of the Institute who is also Chief Executive Officer of GRL) has delegated responsibility from the GRL Board to oversee the

Trustees' Report

implementation of GRL's strategy. The GRL Executive Board includes representatives from each of the main themes of GRL's strategy.

Underneath the GRL Executive Board, the management of each part of the strategy is delegated as follows:

- The Sanger Board of Management (BoM), chaired by the Director of the Institute, is responsible for the delivery of our scientific strategy.

- The Connecting Science Management Board chaired by the Director of Connecting Science is responsible for delivery of our education and public engagement activities.

- The Campus Operations Board (chaired by the Associate Chief Operating Officer) is responsible for the development and management of the buildings and infrastructure of the Wellcome Genome Campus.

The internal Governance structure, including that of the GRL Executive Board and Committees below this level, is in the process of being reviewed and updated with a new

structure to be rolled out in the next year.

Audit and Risk Committee

The Audit and Risk Committee reports to the Board on how it has discharged its responsibilities with regard to reviewing:

- risk management (see page 21);
- the systems of internal control;
- the external and internal auditors' qualifications, independence and performance;
- the integrity and transparency of the financial statements;
- compliance with legal and regulatory requirements;
- policies and procedures relating to fraud or misappropriation;
- any serious issue affecting the staff of GRL, including health and safety, HR policies and employment disputes;
- the effectiveness of financial systems, processes and finance function, and;
- financial budgeting and reporting

The members of the Committee were appointed by the Board and are independent of GRL staff. During the year, membership of the Committee has been as follows:

- Daniel Abrams (Chair)
- Karen Chadwick (Wellcome Trust)
- Nicole Mather
- Daniel Mahony.

Remuneration Committee

The Board of Directors, via its Remuneration Committee, ensures that remuneration arrangements support the strategic aims of GRL, including approving senior staff salaries. The Remuneration Committee sits at least once annually.

Responsibilities of the Board in respect of remuneration are:

- Approving the reward strategy and policies for the remuneration of staff, including the Executive Board;
- Determining individual remuneration packages and terms and conditions of employment above an agreed salary level;
- Exercising any powers of, and approving any decisions required by, the Trust in respect of the Genome Research Limited Pension Plan; and
- Ensuring remuneration practices and policies facilitate the employment and retention of talented people.

Nominations Committee

The Nominations Committee has delegated responsibility from the GRL Board to review the structure, size and composition of the GRL Board, taking account of relevant skills, experience and diversity and to make recommendations to the GRL Board regarding the appointment of its members, and members of the Audit and Risk Committee. The Nominations Committee sits as and when required.

Conflicts of interest

GRL has a policy on conflicts of interest, which applies to directors and employees. The policy requires disclosure of relevant commercial and academic interests. The policy defines the interests that should be disclosed. Outside activities need prior approval and the policy acts out the process for establishing measures to mitigate the impact of potential conflicts.

Key Management Personnel

The Key Management Personnel of GRL have been defined as members of the Executive Board to whom the Board of Directors have delegated responsibilities for the day-to-day running of the organisation. These are: the Chief Executive, the Chief Operating Officer and the Director of Connecting Science.

The total consideration given to Key Management Personnel is summarised in note 7 to the accounts.

The remuneration of the Board of Directors is governed by the Articles of Association. The remuneration of members of the Executive Board who are considered Key Management Personnel is determined by the Board of Directors as described above, by benchmarking against equivalent positions within the sector.

Auditor

The auditor, Deloitte LLP, have indicated their willingness to continue in office and a resolution concerning their reappointment was approved at the Annual General Meeting.

Public benefit

GRL reviews its aims each year to ensure that those aims remain focused on its charitable objects. GRL has referred to the guidance contained in the Charity Commission's general guidance on public benefit when reviewing its aims and objectives and in planning its future activities.

The Directors are satisfied that due regard has been given to the public benefit guidance published by the Charity Commission as required by section 17 of the Charities Act 2011.

In the opinion of the directors all of GRL's charitable activities are focused on the objects and aims set out above and are undertaken to further GRL's charitable objects for the public benefit.

Health and safety

The Wellcome Genome Campus management recognise that proactive, well-managed health and safety is directly linked to its growth and success.

In March the Campus was awarded a gold award for health and safety achievements in the annual RoSPA awards. Organisations receiving a RoSPA Award are recognised as being world-leaders in health and safety practice. Every year, nearly 2,000 entrants vie to achieve the highest possible accolade in what is the UK's longest-running H&S industry awards.

Hybrid working is working well across the Institute with record numbers being supported to work safely at home as well as work. Following the transition to hybrid working we have not received any reports of incidents from those working at home. This new way of working has brought its challenges, which we have had to adjust, including the number of first aiders and other key personnel present on the Campus during the working day.

Significant incidents have been minimal in the past year, with just one lost time injury incident reported to the HSE. We also reported a near miss incident resulting from maintenance activities in one of our cryostorage areas. We followed up with a very thorough review of the incident, with a subsequent programme of work to update facilities and some of our processes.

One positive consequence of launching our health and safety management system Assure, has been an increased reporting of all incident types. One indicator we monitor is the ratio of near miss to injury incidents. Currently, this stands at just under six near miss or hazard reports to one injury. Following the approval of the Campus Environmental Sustainability Strategy, staff engagement has increased around the twelve themes and a number of initiatives have already been introduced (see chart on page 27). Working groups have been established for each theme and individual strategies are being developed to outline the actions and investment required to meet the individual and overarching targets. KPIs are being developed to objectively measure our progress against each theme.

Streamlined Energy and Carbon Reporting

In compliance with the Streamlined Energy and Carbon Reporting (2019) Framework, our energy split is shown in the table opposite.

every injury incident. Our aim is to increase this ratio with improved education and engagement of our employees and contractor workforce.

Similarly we undertake an internal assurance programme of laboratories, plant and shared spaces, as well as reviewing the health and safety of our contractor organisations, with actions that can be tracked. Senior management receives a monthly summary of incidents, along with progress on the assurance programme and outstanding actions.

The Wellcome Genome Campus is supplied and billed on its total main incoming utilities supplies. Energy consumption is measured by building, and allocated to individual organisations by reference to floor space. Shared spaces have been apportioned in line with management charges, which are primarily calculated based on headcount.

The introduction of hybrid working has seen a change in staff working patterns and therefore energy consumption on campus. As expected, consumption has increased from levels seen during the pandemic but as overall numbers are still reduced, consumption has not returned to pre-pandemic levels.

Energy efficient actions

Emissions have reduced significantly in the year as a result of a reduction in power and gas consumption associated with the operating the Research Science Facility, which has now closed, and a significant reduction in Data Centre

UK Greenhouse gas emissions and energy use data for the period 1 October to 30 September		
	2022	2021
Energy Consumption used to calculate emissions [kWh]:	28,651,680	49,220,171
Scope 1 emissions [tCO₂e]		
Total Scope 1	2,267	5,775
Gas consumption	1,148	3,855
On-site generation [CCHP]	1,117	1,376
Owned transport and LV Generators	2	1
Generation	-	543
Biodiesel—ground vehicles	0.01	0.08
Scope 2 emissions [tCO₂e]		
Total Scope 2	3,205	4,149
Purchased electricity	3,205	4,149
Scope 3 emissions [tCO₂e]		
Total Scope 3		
Electricity transmission and Distribution	302	373
Business travel in employee owned vehicles	293	367
	9	6
Total gross emissions [tCO₂e]	5,775	10,298
Intensity ratio [tCO₂e/floor area m²]	0.064	0.120

Trustees' Report

Environmental Statement

The ISO 14001 & ISO 50001 management systems successfully completed surveillance audits and demonstrated they are designed to support the strategic direction and deliver the intended results.

As part of our aspiration to achieve Net Zero by 2030, we have developed an energy & decarbonisation strategy, which outlines the interventions and actions required to reduce demand in line with the target. The successful implementation of this plan is dependant on the level of funding available, which may be impacted by inflationary pressures on our core budget. As part of that, accelerated by the volatility of the market and current energy prices, we are considering a number of renewable energy generation options for security of supply.

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consumption, due to decommissioning of legacy systems and procurement of energy efficient equipment.

As part of the energy reduction focus on campus, the chillers in data centre have been replaced with more energy efficient units. These will be operational in early 2023.

Through establishing working groups, staff awareness and engagement around energy efficiency has increased, and a number of conservation measures have been identified to support energy and carbon reduction targets.

Employee Engagement Statement

Refer to the Section 172 Statement on page 17 for details of how Directors have regard for employee interests and engage with employees.

Employment and diversity

GRL is committed to employment practices, systems and policies that go above legislative compliance and follow best practice, while promoting a working environment that supports the realisation of the Organisation's scientific purpose.

People Development & Engagement

Our engagement strategies are a critical element of our service, supporting a return to more regular office based working following the global pandemic. Recovering our sense of community has been a priority, whilst enabling hybrid working and recognising that the pressures and effects of the pandemic continue well beyond lockdown. An extended portfolio of health and wellbeing support has been made available to staff during this time.

Trustees' Report

Many of our core services have been delivered through remote platforms for the past two years and we have started to return to face to face programmes wherever possible. This continues to be a transitional process, with virtual attendance embedded into working practices.

We seek to further grow our focus on personal development, especially supporting talent seen as high potential succession into leadership. We successfully piloted a new 'transformational leadership programme' in the year. The programme will run again next year and will also form the basis of a new leadership programme targeted at those who are emerging leaders of the future.

These two courses complement a range of established talent programmes and will develop inspiring leadership behaviours, whilst also equipping staff to manage difficult, complex conversations in the workplace.

We have implemented Workday as our HR system of choice to manage all people related services, replacing three legacy systems that manage employee data, recruitment and development. This system will serve to drive automated, efficient processes and a transition towards real time data. There will be future enhancements and a broadening of utilisation once new processes are embedded and the community have become familiar with the system.

Maintaining a great place to work

The 'Great Place to Work' employee opinion survey is conducted every 18 months and has seen year-on-year improvements with engagement scores since commencing surveys in 2018. Our last scores included Wellbeing scoring 84% (+3 v 2019 survey), Engagement 83% (+4), Trust Outcome 67% (+6) and an overall Trust Index score of 79% (+4).

These scores affirm that GRL is a 'great place to work' when benchmarked against results from other best workplaces – although it was noted that there were groups of lower scoring employees when categorised by ethnicity, that place continued emphasis on the importance of our EDI strategy. Our last survey has set a high bar to reach for our next round of feedback, took place in Q4 of 2022 and following the pandemic, we look forward to learning where our development focus will be in 2023.

Embedding professional standards, inclusion and transparency into careers at GRL

Our Culture Development programme continues to shape our commitment to inclusivity and people values in all we do. We have established clear and defined standards of behaviour that are discussed at annual appraisal and supported through tools such as 360 feedback as/when needed. Our new HR system will serve to further push behaviours into all our people processes, and we anticipate refreshing our performance review process in 2023, once staff are more familiar with Workday.

Alongside a new HR system, we are launching a 'Career Pathways' project, that aims to develop and implement clear and transparent career choices for staff, both within their chosen career family but also more broadly into complimentary roles at GRL. This project commenced in Q4 2022 and aims to bring together all relevant career information under one information source, enabling staff to make more informed career development and progression decisions.

Our approach to Equality, Diversity and Inclusion (EDI) has never been more relevant than now, at a time when a meaningful and impactful position regarding inequity and discrimination is expected. We have recently completed an extensive Faculty recruitment campaign for 10 critical



The 12 themes of the Campus Sustainability Strategy



Trustees' Report

scientific leadership roles across our 5 scientific programmes. We have met our target of achieving 50:50 gender balance with all offers made - assuming all offers lead to new joiners, this will evolve our Faculty split to 60:40 in favour of men (2021 was 72:28). Whilst there is more to be done, this is moving the dial in a positive direction.

During the year, we have launched significant and ambitious new programmes that serve to underpin our continued broadening of EDI, through wider engagement of leadership and staff participation.

We have launched the UK's first Post-Doctoral Fellowship aimed at people from black heritage backgrounds - a cohort that is significantly under-represented across academia. The Sanger Excellence Fellowship is designed to support the training and career development of black talent to catalyse and effect change along the pipeline. At least one Fellowship will be awarded each year, after a competitive selection process and successful candidates will join one of the

We have also commenced a reverse mentoring programme, with the first cohort approaching completion. This initiative has seen Black, Asian and Minority Ethnic staff and students from across GRL working with leaders to share their different lived and professional experiences. The dynamic of a typically more junior member of staff leading conversations and being empowered to challenge has proved to be both powerful and compelling. The initiative has set up new relationships, as well as enabling underrepresented staff to have key allies/sponsors in positions of influence.

We continue to track and report our position on Gender pay. In 2021 (the most recent reporting reference date), GRL had a median gender pay gap of 7.8% (2020: 8.7%) and mean gender pay gap of 13.4% (2020: 11.6%). We have developed Institute's research programmes for three years. The

a strategy to reduce the gap, including completing a salary benchmarking exercise in October 2022, which has led to larger salary increases in job families with higher proportions of women. The full gender pay report can be found on our website. Data for 2022 will be published in mid 2023.

We continue to lead Campus-wide EDI activities in collaboration with the EBI through the 'Equality in Science' programme. The LGBT+, Parent/Carers' and Race Equity Engagement networks are well established and we continue to use these mechanisms to provide specific community support, such as peer-to-peer mentoring, targeted workshops and talks. We are working with our communities to further evolve our work around disability and neurodiversity.

Our [equal opportunities policy](#) mandates that GRL does not discriminate against any job applicant or employee on the grounds of age, disability (including individuals who become disabled while in the Charitable Company's employment), sex, gender reassignment, pregnancy, maternity, race, sexual

orientation, marital status, religion or belief; and that decisions on employment, training, promotion and career progressions are made on the basis of their individual performance.

We are continually reviewing how we can further establish ourselves as a fully inclusive employer and in acknowledging our efforts and achievements made to date specifically regarding gender equality, we also recognise that these efforts can expand further to encompass all forms of equality by broadening our commitment with positive interventions and collaboration.

This Trustees' report, incorporating the Strategic report, is approved by order of the Board of Directors.

DocuSigned by:

jeremy farrar

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Trustees' Report

Excellence Fellowship has secured its first three PDF's (including a co-funded Fellowship with Cancer Research UK) and we seek for this to be an ongoing commitment that helps

grow better representation of black British and black heritage staff within science at GRL (and beyond). Our Janet Thornton

Sir Jeremy Farrar,

Chair of the Board of Directors,

Fellowship (aimed at people returning to science) continues to

grow and is in its seventh year: <https://www.sanger.ac.uk/>

16 December 2022

[about/equality-in-](#)

[science/janet-thornton-fellowship/](#)

Statement of Directors' responsibilities

The Directors are responsible for preparing the Annual Report and the Financial Statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice), including FRS 102 "the Financial Reporting Standard applicable in the UK and the Republic of Ireland".

Company law requires the Directors to prepare Financial Statements for each financial year which give a true and fair view of the state of affairs of the charitable company and of the incoming resources and application of resources, including the income and expenditure, of the charitable company for that year. In preparing these Financial Statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the Financial Statements; and
- prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the charitable company will continue its activities.

The Directors are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that the Financial Statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the charitable company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Disclosure of information to auditor

As far as the Directors are aware:

- there is no relevant audit information of which the charitable company's auditor is unaware; and
- the Directors have taken all steps that they ought to have taken to make themselves aware of any relevant audit information and to establish that the auditor is aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of S414 of the Companies Act 2006.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.



Report on the audit of the financial statements

Opinion

In our opinion the financial statements of Genome Research Limited (the 'charitable company'):

- give a true and fair view of the state of the charitable company's affairs as at 30 September 2022 and of its incoming resources and application of resources, including its income and expenditure, for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice, including Financial Reporting Standard 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland"; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements which comprise:

- the statement of financial activities (incorporating an income and expenditure account);
- the balance sheet; and
- the related notes 1 to 24

The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" (United Kingdom Generally Accepted Accounting Practice).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs(UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report.

We are independent of the charitable company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the Financial Reporting Council's (the 'FRC's') Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the charitable company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the trustees with respect to going concern are described in the relevant sections of this report.

Other information

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The trustees are responsible for the other information contained within the annual report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge

be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Responsibilities of trustees

As explained more fully in the Statement of Directors' Responsibilities, the trustees (who are also the directors of the charitable company for the purpose of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the charitable company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable

obtained in the course of the audit, or otherwise appears to

Annual Report and Financial Statements for Year Ended 30 September 2022 assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Extent to which the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of noncompliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

We considered the nature of the charitable company's industry and its control environment, and reviewed the charitable company's documentation of their policies and procedures relating to fraud and compliance with laws and regulations. We also enquired of management, trustees and internal audit about their own identification and assessment of the risks of irregularities.

We obtained an understanding of the legal and regulatory framework that the charitable company operates in, and identified the key laws and regulations that:

- had a direct effect on the determination of material amounts and disclosures in the financial statements. These included UK Charities Act, UK Companies Act and pensions legislation; and
- do not have a direct effect on the financial statements but compliance with which may be fundamental to the charitable company's ability to operate or to avoid a material penalty. These included the Charity Commission for England and Wales (Charity Commission) regulations.

We discussed among the audit engagement team including relevant internal specialists such as pensions, and IT specialists regarding the opportunities and incentives that may exist within the organisation for fraud and how and where fraud might occur in the financial statements.

As a result of performing the above, we identified the greatest potential for fraud or non-compliance with laws and regulations in the following areas, and our specific procedures performed to address them are described below:

- Risk of fraud in income recognition: this is a presumed risk under International Auditing Standards. We have pinpointed our fraud risks on third party grant income and trading income including the UK Biobank and COVID sequencing projects.
- For third party grant income, income entitlement is dependent on the grant agreement terms and conditions. We consider the risk to be related to the recognition of income under new grant agreements in line with those agreements and the Charity SORP requirements. To address this risk, we have tested the operating effectiveness of the relevant controls and deemed the controls to be effective. We have then tested a sample of new grant agreements to contract documents, invoices, and cash receipts, as well as reviewing board and committee minutes, to test whether income has been accurately recognised in the financial statements.
- For trading income, income entitlement is dependent on the contract terms and conditions. We consider the risk to be related to the recognition of income in line with those contracts and the Charity SORP requirements. To address this risk, we have gained an understanding of the controls in place governing the recognition of income under these contracts and obtained evidence of control implementation, we have tested significant projects to contract documents, invoices, and cash receipts, as well as reviewing board and committee minutes. Where a contract is accounted for on a 'costs to complete' basis, we have recalculated the percentage of cost to complete and compared to the income recognised in the current year, tested a sample of costs incurred in the year and assessed the accuracy of

management's estimates of costs to complete by comparing the actual costs incurred for the year to the budgeted costs and inquired with the relevant project managers for any revisions made to the budget, as well as considering any relevant subsequent events on the contracts.

- Risk of fraud in investment valuations.
- Investment valuation requires significant judgement by management. There is a risk that direct investments held at fair value have not been valued using reasonable valuation techniques. We have gained an understanding of the controls in place around investment valuations and obtained evidence of control implementation. We have tested the valuation of the investments by obtaining the valuation paper prepared by management for all investments held and testing for reasonability the key inputs used in the valuations.

In common with all audits under ISAs (UK), we are also required to perform specific procedures to respond to the risk of management override. In addressing the risk of fraud through management override of controls, we tested the appropriateness of journal entries and other adjustments; assessed whether the judgements made in making accounting estimates are indicative of a potential bias; and evaluated the business rationale of any significant transactions that are unusual or outside the normal course of business.

In addition to the above, our procedures to respond to the risks identified included the following:

- reviewing financial statement disclosures by testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described as having a direct effect on the financial statements;
- performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;
- enquiring of management, internal audit and in-house legal counsel concerning actual and potential litigation and claims, and instances of non-compliance with laws and regulations; and
- reading minutes of meetings of those charged with governance, reviewing internal audit reports and reviewing any correspondence with HMRC and the Charity Commission.

Report on other legal and regulatory requirements Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the trustees' report, which includes the strategic report and the directors' report prepared for the purposes of company law for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report included within the trustees' report have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified any material misstatements in the strategic report or the directors' report included within the trustees' report.

Matters on which we are required to report by exception

Under the Companies Act 2006 we are required to report in respect of the following matters if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in respect of these matters.

Use of our report

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charitable company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company and the charitable company's members as a body, for our audit work, for this report, or for the opinions we have formed.

DocuSigned by:
J. Hodges
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Jessica Hodges ACA (Senior statutory auditor)
For and on behalf of Deloitte LLP

Statutory Auditor

London, UK

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Annual Report and Financial Statements for Year Ended 30 September 2022

Financial Statements

Statement of Financial Activities (incorporating an Income and Expenditure Account) for the year end 30 September 2022

		2022	2022	2022	2022	2021
		£'000	£'000	£'000	£'000	£'000
	Note	Unrestricted	Endowment	Restricted	Total funds	Total funds
INCOME						
Income from charitable activities		-	-	126,878	126,878	137,163
Income from other trading activities		53,964	-	4,480	58,444	76,196
Investment income		594	-	-	594	8,073
Interest		-	17	7	24	26
Total income	3	54,558	17	131,365	185,940	221,458
EXPENDITURE						
Charitable activities						
	4	(41,891)	-	(141,270)	(183,161)	(207,875)
Total expenditure		(41,891)	-	(141,270)	(183,161)	(207,875)
Unrealised gain on investments	10	683	-	-	683	67
Net income (expenditure)		13,350	17	(9,905)	3,462	13,650
Other recognised gains						
Actuarial gains on defined benefit pension scheme	8	-	-	149,900	149,900	
Net movement in funds		13,350	17	139,995	153,362	80,950
Total funds (deficit) brought forward at 1 October	22	18,272	670	24,189	43,131	(37,819)
Total funds carried forward at 30 September		31,622	687	164,184	196,493	43,131

The Statement of Financial Activities includes all gains and losses recognised in the year. All income and expenditure derive from continuing activities.

2021 comparatives are given in note 22.

Financial Statements

Balance Sheet

As at 30 September 2022

		Total funds 2022	Total funds 2021
	Note	£'000	£'000
Fixed assets			
Tangible assets	9	162,440	167,864
Investments	10	5,080	4,398
Total fixed assets		167,520	172,262
Current assets			
Stocks	12	9,841	13,681
Debtors	13	66,999	61,139
Cash at bank and in hand		7,516	4,629
Total current assets		84,356	79,449
Creditors: amounts falling due within one year	14	(48,780)	(53,372)
Net current assets		35,576	26,077
Total assets less current liabilities		203,096	198,339
Creditors: Amounts falling due after one year	15	(17,224)	(16,633)
Provisions	16	(3,079)	(5,375)
Net assets excluding pension asset (liability)		182,793	176,331
Defined benefit pension scheme asset (liability)	8	13,700	(133,200)
Total net assets		196,493	43,131
The Funds of the Charity			
Restricted income funds	22	150,484	157,389
Endowment fund	22	687	670
Pension funds (deficit)	8	13,700	(133,200)

Total restricted funds		164,871	24,859
Unrestricted funds	22	31,622	18,272
Total Charity funds		196,493	43,131

The notes on pages 35 to 54 form part of these financial statements. The financial statements on pages 33 to 54 were approved and authorised for issue by the Board of Directors on 16 December 2022 and were signed on its behalf by:

DocuSigned by:
Jeremy Farrar
DD7DD2253AC9495...

Sir Jeremy Farrar

Chair

Registered company number: 2742969

Genome Research Limited

Annual Report and Financial Statements for Year Ended 30 September 2022

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022****1. ACCOUNTING POLICIES****Basis of preparation and statement of compliance**

The financial statements of Genome Research Ltd (“GRL”) have been prepared on a going concern basis in accordance with Financial Reporting Standard 102 and with the Statement of Recommended Practice ‘Accounting and Reporting by Charities FRS 102 as published in 2019’ (“the SORP 2019”) together with the Companies Act 2006 and the Charities Act 2011.

GRL meets the definition of public benefit entity under FRS 102.

The Financial Statements have been prepared under the historical cost convention, as modified by the revaluation of investments and on a basis consistent with prior years.

The Charitable Company meets the definition of a qualifying entity under FRS 102 and has therefore taken advantage of the disclosure exemptions available to it in respect of its separate financial statements. The financial statements of GRL and its subsidiaries (Hinnton Hall Limited, Genome Research Trading Limited, Mosaic Therapeutics Limited and GRL Construction Limited) are consolidated within the financial statements of its parent entity, the Wellcome Trust. As such, GRL has applied the disclosure exemption from preparing consolidated financial statements. Exemptions have also been taken in relation to presentation of a Statement of Cash Flows, Financial Instruments and Related Party Transactions. The equivalent disclosures relating to the exemptions have been included in the Consolidated Financial Statements of the Wellcome Trust, its parent. Related party transactions with Trustees and key management personnel are included in note 7.

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

The preparation of financial statements in conformity with FRS 102 requires the use of certain accounting estimates. It also requires management to exercise its judgement in the process of applying the Charitable Company’s accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in note 2.

Fund accounting

The Charitable Company’s funds consist of restricted and endowment funds which are subject to specific conditions imposed by the donors, and unrestricted funds which may be spent at the discretion of the Directors. The endowment fund is an expendable endowment. Further analysis of funds is detailed in note 22.

Income

Income is recognised in line with the SORP requirements for entitlement, probability and measurement. The Charitable Company’s core funding from the Wellcome Trust is in the form of a multi-period grant which is subject to annual approval based on a review of science and the agreement of annual budgets. The income for core funding is recognised when the conditions for grant recognition have been satisfied. Entitlement is when the expenditure has been committed.

Other research grants fall largely into two categories: those which are performance related and specify a level of service, and those with no conditions attaching. Income for performance-related grants is recognised when the expenditure is incurred as this reflects the service levels. Income for non-performance-related grants is recognised when awarded as this represents entitlement.

Capital grants with no performance related conditions are recognised when the Charitable Company is entitled, the receipt is probable and the amount is measureable which is when the award letter is received.

Other income is recognised under the same criteria of entitlement, probability and measurement. Judgement is required to determine the point at which these conditions are met. Income received in advance of meeting the recognition criteria is deferred and income earned but not received is accrued. Other income relates to tenant services, licensing, royalties and service contracts.

Income in relation to service contracts, including the contract to deliver sequenced genomes to UK Biobank, is recognised by reference to the stage of completion of the contract activity as at the balance sheet date. This is normally measured by the proportion of contract costs incurred for work performed to date compared to the estimated total contract costs once the final outcome can be assessed with reasonable certainty. All income is recognised net of Value Added Tax (‘VAT’). Where payments are received from customers in advance of services provided, the amounts are recorded as deferred income and included as part of creditors due within one year. Where income is recognised in advance of invoicing, the amounts are recorded as accrued income.

Investment income is recognised when an investment is sold for more than its carrying value.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2022

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Expenditure

Liabilities are recognised as expenditure as soon as there is a legal or constructive obligation committing the Charitable Company to that expenditure, it is probable that settlement will be required and the amount of the obligation can be measured reliably. All expenditure is recognised on an accruals basis. All grants awarded are subject to performance conditions and as such the grant is recognised in line with the work performed by the sub-grantee. The Charitable Company has three activities: Sanger Institute, Connecting Science and Enterprise and Innovation. Where possible, expenditure that relates to more than one activity is apportioned. Apportionment is in proportion to direct costs. Governance costs represent expenditure incurred in compliance with constitutional and statutory requirements including internal and external audit and are included within support costs.

The costs of pension related expenditure is allocated on the basis of the staff to which the costs relate.

Redundancy costs are recognised in the period in which the employees affected are notified of the decision.

Tangible fixed assets and depreciation

Tangible fixed assets are measured initially on the balance sheet at their historical cost. Tangible fixed assets costing more than £10,000 are capitalised together with any incidental costs of acquisition. Costs related to building projects are capitalised from the date the building project becomes viable. Prior to that date costs are written off as incurred. During the construction phase, buildings are classified as being in the course of construction until the date of practical completion when they are transferred to leasehold buildings.

Depreciation is calculated so as to write off the cost of the tangible fixed assets, less their estimated residual values, on a straightline basis over the expected useful economic lives of the assets concerned. Impairment reviews are undertaken when, in the opinion of the directors, events or circumstances have arisen that indicate that the carrying value of an asset is impaired. They are reviewed annually and any impairment is recognised in the year in which it occurs. No depreciation is charged during the year on the assets in the course of construction. Where an asset has been purchased for use on a third-party funded activity, it is written off over the period of the funding.

The principal annual rates used for this purpose are:

Short leasehold buildings	Over the lease term
Laboratory equipment fixtures and fittings	
General laboratory equipment, fixtures and fittings	Over 5 years
Sequencing instruments	Over 3 years
Computing equipment	Over 3 years

All the Charitable Company's tangible fixed assets are used for direct charitable purposes. The short leasehold buildings are held under leases from the Wellcome Trust, at £nil cost p.a., which expire in February 2055.

Financial Instruments

The Charitable Company has chosen to adopt Sections 11 and 12 of FRS 102 in respect of financial instruments. Financial assets and financial liabilities are recognised when the Charitable Company becomes a party to the contractual provisions of the instrument.

i) Financial assets

Basic financial assets including trade and other receivables, cash and bank balances, and intercompany loans are initially measured at transaction price (including transaction costs), except for those financial assets classified as at fair value through profit or loss, which are initially measured at fair value (normally the transaction price excluding transaction costs).

Financial assets and liabilities are only offset in the Balance Sheet when, and only when, there exists a legally enforceable right to set off the recognised amounts and the Charitable Company intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Investments — see policy below

Cash at bank and in hand has maturity of less than 3 months.

Financial assets are derecognised when (a) the contractual rights to the cash flows from the asset expire or are settled, or (b) substantially all the risks and rewards of the ownership of the asset are transferred to another party or (c) control of the asset has been transferred to another party who has the practical ability to unilaterally sell the asset to an unrelated party without imposing additional restrictions.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2022

ii) Financial liabilities

Basic financial liabilities, including trade and other payables and loans from fellow group companies are recognised at transaction price.

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities. Trade payables are normally recognised at settlement amount after allowing for any trade discounts due.

Stock

Stock is stated at the lower of cost and net realisable value less costs to complete and sell. Cost is determined on a first-in first-out basis. Stock takes are conducted on a cycle basis. Where necessary, obsolete, slow moving and defective stock is written off or provided for when identified.

Foreign currencies

Transactions denominated in foreign currencies are translated into sterling at the rates ruling at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated at the rates ruling at that date. All differences are recognised in the Statement of Financial Activities.

The Charitable Company's parent has provided the Charitable Company with an open-ended facility to convert currency at a favourable rate. The Charitable Company considers this service to be a donation-in-kind to which no value is attributed. The Charitable Company recognises exchange gains arising on these transactions in the statement of financial activities.

Investments

Unquoted programme related investments are held at management's best estimate of fair value, if this can be reliably measured, or if fair value cannot be measured reliably, at cost less impairment. Changes in fair value are recognised in income and expenditure.

Investments in subsidiaries are measured at cost less impairment.

Defined benefit pension plan

The Charitable Company operates a defined benefit plan for certain employees. A defined benefit plan defines the pension benefit that the employee will receive on retirement, usually dependent upon several factors including age, length of service and remuneration.

The asset (liability) recognised in the balance sheet in respect of a defined benefit plan is the present value of the defined benefit obligation at the end of the reporting date less the fair value of plan assets at the reporting date. The defined benefit obligation is calculated using the projected unit credit method. Annually the Charitable Company engages independent actuaries to calculate the obligation. The present value is determined by discounting the estimated future payments using market yields on high-quality corporate bonds that are denominated in sterling and that have terms approximating the estimated period of the future payments ('discount rate').

The fair value of plan assets is measured in accordance with the FRS 102 fair value hierarchy and in accordance with the Charitable Company's policy for similarly held assets. This includes the use of appropriate valuation techniques.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to "Actuarial gains and losses on defined benefit pension plans" in the Statement of Financial Activities.

The net interest cost is calculated by applying the discount rate to the net balance of defined benefit obligation and the fair value of plan assets. This cost is recognised as part of resources expended.

Defined contribution pension plan

The Charitable Company operates a defined contribution plan for certain employees. A defined contribution plan is a pension plan under which the Charitable Company pays fixed contributions. Once the contributions have been paid the Charitable Company has no further payment obligations. The contributions are recognised as an expense when they are due. Amounts not paid are shown in accruals in the balance sheet. The assets of the plan are held separately from the Charitable Company in independently administered funds.

Provisions and contingencies

Provisions are recognised when the Charitable Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2022

Provisions are discounted to present value where the effect is material.

The Charitable Company recognises provisions in relation to faculty members continuing their research at other institutions and amounts due to employees under redundancy and retention agreements in relation to the closure of the Research Support Facility (RSF).

Contingent liabilities are potential future cash outflows, where the likelihood of payment is considered more than remote, but is not considered probable or cannot be measured reliably. These are not recognised but are disclosed in the financial statements.

Contingent assets are potential future inflows of economic benefits where the likelihood of receipt is considered more than remote, but is not considered probable or cannot be measured reliably. These are not recognised but are disclosed in the financial statements.

Taxation

The Charitable Company is exempt from taxation on its income and gains falling within Part 11 of the Corporation Tax Act 2010 or section 256 of the Taxation of Chargeable Gains Act 1992 to the extent that they are applied to their charitable purposes.

In common with many other charities, the charity is unable to recover the majority of VAT incurred on expenditure. The amount of VAT that cannot be recovered is included within the underlying cost to which it relates.

Going Concern

In assessing whether the going concern assumption is appropriate, the Trustees take into account all available information which is at least, but is not limited to, twelve months from the date when the financial statements are authorised for issue. GRL do not commit to set levels of activity on third party awards. In the event that we wished to support a study beyond the terms of the grant, we would only do this if there were sufficient budget in the core award. Trading contracts are agreed on commercial terms, in such a way that, as a minimum, all costs are recovered and GRL is not exposed to significant working capital deficits. The year ended 30 September 2022 was the first year in a five year award from GRL's parent company, Wellcome. Management have sufficient discretion over spend to ensure expenditure remains within budget over the five year period. After considering the 2022-23 budget and strategic plan for 2021-2026, income under trading contracts and the 5 year award from Wellcome for 2021-2026, the Trustees are satisfied that it is appropriate to adopt the going concern basis in preparing the financial statements of GRL.

2. SIGNIFICANT ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of the Charitable Company's accounting policies which are described in note 1, the directors are required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision only affects that period, or in the period of the revision and future periods if the revision affects both current and future periods.

2.1 Significant judgements in applying the entity's accounting policies

The following are the significant judgements, apart from those involving estimations (which are dealt with separately below), that management has made in the process of applying the charity's accounting policies and that have the most significant effect on the amounts recognised in the financial statements.

Recognition of charitable income

Trading income earned under significant long term service contracts is recognised based on stage of completion. Judgement is required to determine the most appropriate method of calculating the stage of completion.

Investment valuation

The Charitable Company holds unquoted programme related investments. Judgement is required to determine the most appropriate valuation techniques for calculating the best estimate of fair value for reporting purposes.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2022

2.2 Significant accounting estimates and assumptions

The Charitable Company makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

Assumptions used to determine the carrying amount of the Charitable Company's defined benefit pension obligation

The Charitable Company has an obligation to pay pension benefits to certain employees. The cost of these benefits and the present value of the obligation depend on a number of factors, including; life expectancy, salary increases, asset valuations and the discount rate used. The scheme is most sensitive to changes in the discount rate and rate of inflation applied. Management estimates these factors in determining the net pension obligation in the balance sheet. The discount rate is set by reference to market yields at the end of the reporting period on high-quality corporate bonds. See note 8 for the disclosures relating to the defined benefit pension scheme including an analysis of the sensitivity to the principal assumptions of the value of the plan's liabilities. We discuss the critical assumptions relating to the defined benefit pension scheme in the Financial Review section on page 19.

Long term service contracts

Income in relation to the long term service contracts to deliver sequenced genomes to UK Biobank, is recognised by reference to the stage of completion of the contract activity as at the balance sheet date. Management estimates the stage of completion by comparing costs incurred as of the balance sheet date to total expected costs. Total expected costs are forecast by reference to a per sample cost card of which 86% are fixed price contracts for certain volumes. The contract was completed in the year ended 30 September 2022.

Fair value measurement and valuation processes

Fair value of programme related investments is estimated by reference to the price of recent investment, where available. The price may be adjusted if there are indicators that this price is not a good estimate of fair value. In the event that such indicators exist, other valuation techniques are used.

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022****3. TOTAL INCOME**

The Charitable Company has three main activities: Sanger Institute, Connecting Science and Enterprise and Innovation. Detailed analysis follows:

	2022	2021
	£'000	£'000
Sanger Institute	118,314	129,119
Connecting Science	3,993	3,747
Enterprise and Innovation (Campus)	4,571	4,297
Total income from charitable activities	126,878	137,163

Core grants from Wellcome	92,464	109,662
Other grants from Wellcome	3,710	4,181
Grants from other funders	30,704	23,320
Total grants from charitable activities	126,878	137,163
Income from other trading activities	58,444	76,196
Investment income	594	8,073
Interest	24	26
Total income	185,940	221,458

Income includes grant funding for both capital and operating expenditure. Grants from other funders includes £2.9 million government research grants (2021: £6.6 million). There are no unfulfilled conditions attached to these grants. Other trading income includes income from sequencing services, of which £4.2 million (2021: £41.8 million) relates to the UK Biobank project to sequence whole genomes and £46.5 million (2021: £25.1 million) in relation to COVID sequencing; as well as tenant services and utilities, salary recharges, rental income, licences, the release of deferred income from EBI, and other immaterial income streams. Other trading income of £54.0 million (2021: £64.0 million) relates to unrestricted funds. Interest income of £24,000 (2021: £26,000) has been recognised in the year, of which £16,000 (2021: £16,000) relates to the endowment fund. Investment income of £0.6 million (2021: £8.1 million) relates to gains on the sale of Programme Related Investments and is unrestricted income (note 10).

Wellcome grants and trading income is derived from the UK, other than licensing income of £2.4 million (2021: £1.8 million) from our COSMIC platform which is sold via an agency in Germany. In the opinion of the Directors, other grant funding does not differ substantially between countries due to the collaborative nature of the research performed, and so is considered one market. Investment income is derived from the USA. All income is derived from activities in the UK.

4a. EXPENDITURE

The Charity has three activities. Expenditure relating to each activity comprises operating expenditure, including depreciation.

	2022			2021		
	Direct	Support	Total	Direct	Support	Total
	£'000	£'000	£'000	£'000	£'000	£'000
Sanger Institute	155,819	14,979	170,798	181,778	13,906	195,684
Connecting Science	5,259	506	5,765	5,275	404	5,679
Enterprise and Innovation	6,019	579	6,598	6,049	463	6,512

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

	167,097	16,064	183,161	193,102	14,773	207,875
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Support costs have been allocated in proportion to direct costs. Support costs include staff costs of £9.4 million (2021: £8.6 million), depreciation of £0.7 million (2021: £0.7 million), premises costs of £1.8 million (2021: £1.8 million) and other costs of £4.2 million (2021: £3.7 million). Support costs include governance costs.

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4b. GOVERNANCE COSTS

	2022	2021
	£'000	£'000
External audit costs	164	96 73
Internal audit costs	73	
Directors' remuneration and expenses (see note 7)	8	8
	245	177

Governance costs have been allocated in proportion to direct costs.

5. GRANTS AWARDED

Expenditure related to grants awarded is as follows:

	2022	2021
	£'000	£'000
Grants to Institutions		
University of Cambridge	2,736	2,376 638
The Broad Institute		535
Ghent University	534	-
University of Alabama	505	-
University of Southern California	432	-
Weizmann Institute of Science	271	-
Catalonia Insititute for Energy Research	207	-
Imperial College London	232	-
CDC Foundation	104	254
Colombian Corporation for Agricultural Research	62	520
Kerala Institute of Medical Sciences	52	889
University of Ibadan	47	257
Research Institute of Tropical Medicine, Philippines	43	381
University of Oxford	-	710

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

University College London	-	281
Grants to other Institutions	2,098	1,385
	<u>7,961</u>	<u>7,588</u>

All grants awarded are for the field of genomic research, either through collaborative programmes or to build capacity in lower middle income countries.

Grants are generally awarded to a particular individual, although the actual award is made to the host institution.

Included within Sanger Institute support costs (see note 4a) is an amount of £0.7 million (2021: £0.5 million) allocated to grant making activities.

All grants awarded are subject to performance conditions and as such the grant is recognised in line with the work performed by the sub-grantee. There are no outstanding liabilities for grants not paid other than those recognised as accruals for grants payable in note 14 (Creditors: amounts falling due within one year).

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6. NET EXPENDITURE BEFORE OTHER GAINS AND LOSSES

Net expenditure before other gains and losses is stated after charging:	2022	2021
	£'000	£'000
	<u>(3,856)</u>	
Foreign exchange (gains) losses		68
Depreciation	14,276	14,179
Gain on disposal of fixed assets	(54)	(73)
Internal audit	73	73
Fees payable to the company's auditor for the audit of:		
Statutory financial statements	154	89

7. EMPLOYEE INFORMATION**Number of employees**

The monthly average headcount of employees analysed by activity and function area, was:

	2022		2021	
	Number	Number	Number	Number
Sanger Institute				
Connecting Science	919	917	53	55
Enterprise and Innovation	7			8
Administrative	208			198
	<u>1,187</u>			<u>1,178</u>

Analysed by	Cancer	121	122
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Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

Sanger Institute	Cellular Genetics	87	68
	Human Genetics	69	58
	Parasites and Microbes	130	108
	Tree of Life	69	48
	Open Targets	58	58
	Science Platforms	244	288
	Science Strategy	23	41
	Science Support	4	33
	IT Platforms	108	87
	Translation	6	6
	Total	919	917
Connecting Science		53	55
Enterprise and Innovation		7	8
Administrative		208	198
Total Employees		1,187	1,178
PhD Students		60	60
Total Headcount		1,247	1,238

PhD students are not employed by the Charitable Company but provide a significant contribution to the scientific research. Only those students who receive a stipend directly from GRL are included within the above total.

Included in the monthly average shown above are 1,114 full time employees and 133 part time employees.

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Employment costs	£'000	£'000
Wages and salaries	56,458	54,987
Social security costs	5,976	5,516
Short term benefits	1,000	952
Pension costs	9,710	10,485
		73,144
		71,940

The number of employees whose emoluments amounted to £60,000 or more (excluding employer's National Insurance Contributions, benefits in kind and employer's pension contributions) during the year was as follows:

	2022	2021
	Number	Number
£60,000 to £69,999	58	80

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

£70,000 to £79,999	24	42
£80,000 to £89,999	13	16
£90,000 to £99,999	10	7
£100,000 to £109,999	5	5
£110,000 to £119,999	7	6
£120,000 to £129,999	2	-
£130,000 to £139,999	1	6
£140,000 to £149,999	2	1
£150,000 to £159,999	5	6
£160,000 to £169,999	3	1
£170,000 to £179,999	1	2
£200,000 to £209,999	-	2
£220,000 to £229,999	2	-
£380,000 to £389,999	1	1

All employees earning more than £60,000 participated in one of the charitable company's pension schemes.

The emoluments of the Director of the Wellcome Sanger Institute included in the table above totalled £389,765 (2021: £384,930).

Redundancy and termination payments

	2022	2021
	£'000	£'000
Redundancy and termination costs	399	543

Redundancy payments have been made to individuals where an organisational restructure has resulted in their existing roles no longer being required. All but £71,000 has been paid in the year (see note 16).

Directors' remuneration

The Directors of GRL received no remuneration in relation to their duties as Directors, however they received remuneration totalling £7,650 (2021: £7,648) in respect of other positions held and travel and accommodation expenses of £885 (2021: £nil). No other benefits or expenses were reimbursed to the directors of the Charitable Company. Four of the Directors are either salaried employees of Wellcome or Governors (Directors) of The Wellcome Trust Limited (the corporate trustee of the Wellcome Trust) and do not receive any additional emoluments for their role as Directors of the charitable company. None of these amounts are recharged to the Charitable Company.

Five directors work at, or are directors of, organisations that either received funding from the Wellcome Trust, GRL's parent, or directly from GRL. The Charitable Company has procedures in place to manage conflicts declared.

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Directors' indemnity policy

The charitable company is party to a group-wide directors and officers insurance policy which includes all of its current directors. This is not a Qualifying Third Party Indemnity Provision for the purpose of the Companies Act 2006.

Key management personnel remuneration and benefits

Key management personnel includes members of senior management and directors as described on page 25 of the Directors' report. The employee benefits paid or payable, including pension contributions, to key management for employee services is shown below:

	2022	2021
	£'000	£'000
Salaries and other short-term benefits	705	672

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022****8. PENSION SCHEME**

The Charitable Company operates a funded defined benefit scheme and a defined contribution scheme for its employees.

All contributions to the defined benefit scheme are held in trustee-administered funds (The Genome Research Limited Pension Plan) which is independent of the Charitable Company's finances. A full actuarial valuation of this scheme was carried out at 31 December 2018 and has been updated to 30 September 2022 by a qualified actuary, independent of the scheme's sponsoring employer. The major assumptions used by the actuary are shown below:

	30 September 2022	30 September 2021	30 September 2020
Inflation (RPI)			
Inflation (CPI)			
Salary Growth	3.50%	3.30%	3.05%
Discount Rate	3.15%	2.95%	2.70%
	n/a	n/a	3.55%
Allowance for revaluation of deferred pensions of RPI of	4.90%	2.00%	1.75%
Allowance for pension in payment increases of RPI or 5%	3.50%	3.30%	3.05%
Allowance for pension in payment increases of CPI or 3%	3.20%	3.15%	2.95%
	2.20%	2.30%	2.15%
Commutation of pension to cash at retirement	90% of Post A Day	90% of Post A Day	90% of Post A Day
Mortality assumptions adopted imply the following life expectancies at age 60:			

	30 September 2022	30 September 2021
Male retiring in 2022 (2021)	26.6 years	26.5 years
Female retiring in 2022 (2021)	28.7 years	28.5 years
Male retiring in 2042 (2041)	28.1 years	28.0 years
Female retiring in 2042 (2041)	30.2 years	30.0 years

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Announcements by HM Treasury and the UK Statistics Authority on 4 September 2019 propose changes to the calculation of the Retail Prices Index (RPI) to match the Consumer Price Index including Housing (CPIH) at some time from 2025 to 2030.

This could reduce RPI-linked pension benefits by as much as 1% p.a. if or when CPIH is used instead of RPI, which would lead to a reduction in RPI-linked pension liabilities, or Defined Benefit Obligation. The formal consultation on the proposed changes to RPI was launched on 11 March 2020 and the outcome of this was announced on 25 November 2020. This announcement confirmed that RPI will increase in line with CPIH from 2030. The assumptions adopted to calculate the Defined Benefit Obligation as at 30 September 2022 and 30 September 2021 were derived based on the expectation that RPI will increase in line with CPIH from 2030 and therefore no adjustments have been made for this proposed change within the assumption for RPI used to calculate the Defined Benefit Obligation

The full triennial actuarial valuation of the Genome Research Limited Pension Plan, carried out as at 31 December 2021, showed that the plan had a surplus of £2.9 million.

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

In April 2021 the Charitable Company announced that it was starting a consultation on a proposal to close the defined benefit pension scheme to further accrual. The closure took effect as of 1st October 2021. A gain on curtailment of £11.4 million has been recognised in the year ended 30 September 2021, as a reduction in expenditure.

Wellcome and GRL previously agreed with the GRL Pension Plan Trustee to put in place a Deed of Guarantee. The obligations of the Deed, guaranteed by Wellcome, are that GRL pays the necessary contribution as agreed with the Trustee and the Plan Actuary and that any deficit in the funding identified by a full actuarial valuation will be repaid over a period of five years or less. The Deed provides security to the pension scheme and allows the Pension Trustees to take a longer-term view when deciding their investment strategy.

(i) Charge to the Statement of Financial Activities and Other Comprehensive Income over the financial year:

	2022	2021
	£m	£m
Operating charge		
Current service cost	-	15.5
Expenses**	0.3	0.3
Net interest cost	2.7	3.5
Gains on curtailments	-	(11.4)
Net charge to Statement of Financial Activities prior to actuarial gain	3.0	7.9
Actuarial gain	(149.9)	(67.3)
Total gain in Statement of Financial Activities	(146.9)	(59.4)

** These figures exclude insurance premiums for death in service benefits and PPF levies.

(ii) Defined benefit costs recognised in other comprehensive income:

	2022	2021
	£m	£m
Return on plan assets* - (loss) gain	(50.6)	58.7
Experience (losses) gains arising on the plan liabilities	(48.8)	3.9
Effects of experience adjustments	249.3	4.7
Total amount recognised in other comprehensive income - gain	149.9	67.3

*Excluding interest income

(iii) Reconciliation of opening and closing balances of fair value of scheme assets

	2022	2021
	£m	£m
Fair value of scheme assets at start of year	342.5	274.7

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

Interest income	6.8	4.8
(Loss) return on plan assets (excluding interest)	(50.6)	58.7
Contributions by employer	-	6.2
Benefits paid & death in service insurance premiums	(3.0)	(1.9)
Fair value of scheme assets at end of year	295.7	342.5

Analysis of the sensitivity to the principal assumptions of the value of the plan's liabilities:

Assumption	Change in assumption	Impact on liabilities
Discount rate	Increase/decrease of 0.5% p.a	Decrease/increase by 11.0%
Rate of inflation	Increase/decrease of 0.5% p.a	Increase/decrease by 8.0%
Life expectancy	Increase/decrease of 1 year	Increase/decrease by 1.8%
Long-term rate of mortality improvement	Increase/decrease of 0.25% p.a	Increase/decrease by 0.7%

Contributions payable to the defined benefit scheme during the year amounted to £nil (2021: £6.2 million). In addition £0.6 million (2021: £0.6 million) was paid in respect of scheme administration expenses and insurance premiums for death in service benefits. The actual loss on the plan assets over the period ended 30 September 2022 was £42.0m (2021: £63.5m return).

The best estimate of contributions to be paid by the employer to the scheme for the year beginning after 30 September 2022 is £nil (2021: £nil).

Scheme Assets

	30 September 2022	30 September 2021	30 September 2020
Equity	295.5	341.5	273.6
Other (Property, Cash, etc.)	0.2	1.0	1.1
Total Assets	295.7	342.5	274.7

(iv) Reconciliation of opening and closing balances of the fair value of the defined benefit obligation

	2022 £m	2021 £m
Scheme liabilities at start of year	475.7	473.5
Current service cost	-	15.5
Expenses	0.3	0.3
Interest cost	9.5	8.3
Actuarial gains	(200.5)	(8.6)
Benefits paid & death in service insurance premiums	(3.0)	(1.9)
Gains on curtailments	-	(11.4)
Scheme liabilities at end of year	282.0	475.7

(v) Amounts for the current and previous four years:

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

	2022	2021	2020	2019	2018	
	£m	£m	£m	£m	£m	
Fair value of assets	295.7	342.5	274.7	252.9	231.0	
Present value of scheme liabilities	(282.0)	(475.7)	(473.5)	(455.9)	(344.9)	
Surplus (deficit) in scheme	13.7	(133.2)	(198.8)	(203.0)	(113.9)	
Return on scheme assets	(50.6)	58.7	11.0	6.0	15.2	
Experience (losses) gains on scheme liabilities	(48.8)	3.9	1.5	(0.7)	(0.5)	
Effects of changes in the demographic and financial assumptions underlying the present value of the scheme liabilities	249.3	4.7	Defined contribution	3.8	(86.0)	11.7

scheme

The Charitable Company provides a defined contribution Group Personal Pension Plan.

The amount recognised as an expense for the defined contribution scheme was:

	2022	2021
	£'000	£'000
Current period contributions	6,719	3,281

Contributions paid to the defined contribution scheme during the year amounted to £6.7 million (2021: £3.3 million). Pension contributions are allocated between funds and activities based on the work each employee performs.

9. TANGIBLE FIXED ASSETS

	Assets in the	Short	Laboratory	Total
	course of	leasehold	equipment,	
	construction	buildings	fixtures and	
	£'000	£'000	fittings	£'000
Cost				
As at 1 October 2021	4,213	198,405	150,896	353,514
Additions	5,124	-	4,803	9,927
Transfers	(2,101)	-	2,101	-
Disposals	(1,065)	(10)	(2,335)	(3,410)
As at 30 September 2022	6,171	198,395	155,464	360,030
Accumulated depreciation				
As at 1 October 2021	-	56,809	128,840	185,650
Charge for the year	-	4,217	10,059	14,276
Disposals	-	-	(2,335)	(2,335)

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

As at 30 September 2022	-	61,026	136,564	197,590
<hr/>				
Net book value at 30 September 2022	6,171	137,369	18,900	162,440
<hr/>				
Net book value at 30 September 2021	4,213	141,596	22,055	167,864
<hr/>				

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022****10. PROGRAMME RELATED INVESTMENTS**

	2022	2021	£'000	£'000
At 1 October		4,398		4,331
Realised gains		-		8,073
Unrealised gains		682		67
Disposals		-		(8,073)
At 30 September		5,080		4,398

Unquoted programme related investments represent the fair value of the Institute's holding of ordinary share capital of Microbiotica Ltd (4%) and Congenica Ltd (2%). Kymab (1% holding) was sold in the year ended 30 September 2021 for £8.1m, with the possibility of future milestone payments (see note 18: Contingent assets and contingent liabilities), the gain was recognised as investment income in the prior year.

Investments in subsidiaries as at 30 September 2022 and 2021 were held at £1 (see note 20).

11. TAXATION

The Company is a registered charity, and as such is entitled to certain tax exemptions on income and profits from investments, and surpluses on any trading activities carried on in furtherance of the charity's primary objectives, if these profits and surpluses are applied solely for charitable purposes.

The estimated cost of irrecoverable VAT suffered by the charitable company was £4.9 million (2021: £4.0 million). This amount is charged in the accounts with its related expenditure.

12. STOCK

	2022	2021
	£'000	£'000
Raw materials and consumables	9,841	13,681

In the opinion of the Directors, replacement costs of stock would not differ materially from that stated above.

13. DEBTORS

	2022	2021
	£'000	£'000
Trade debtors	2,781	11,876
Amounts owed by parent undertaking	47,745	35,958
Amounts owed by subsidiary undertakings	256	660
Prepayments	9,171	8,646
Accrued income	5,125	2,713
Other debtors	1,921	1,286
	66,999	61,139

Prepayments relate to annual service and maintenance contracts paid in advance. Accrued income relates to work undertaken on third party grants in advance of funding being received. Amounts owed by parent and group undertakings are unsecured, interest free, have no fixed date of repayment and are repayable on demand.

Amounts owed from subsidiary undertakings include £0.1 million (2021: £0.3 million) due from Genome Research Trading Limited, £0.2 million (2021: £0.1 million) from Mosaic Therapeutics Limited and £nil (2021: £0.3 million) from GRL Construction Limited.

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

None of the amounts shown above are due after one year.

14. CREDITORS: Amounts falling due within one year

	2022	2021
	£'000	£'000
Trade creditors	4,524	15,461
Amounts owed to group undertakings	622 2,489	-
Taxation and social security	1,335	1,637
Other creditors	-	1,774
Payroll creditors	450	343
Accruals for grants payable	4,818 34,542	450
Other accruals		7,622
Deferred income		26,085
15. CREDITORS: Amounts falling due after one year	48,780	53,372

Amounts owed to group undertakings are unsecured, interest free, have no fixed date of repayment and are repayable on demand.

15. CREDITORS: Amounts falling due after one year

	2022	2021
	£'000	£'000
Between one and five years - deferred lease premium	1,597	2,130
More than five years - deferred lease premium	15,627	14,503
	17,224	16,633

Deferred income	Lease premium	Grant income	Trading contracts	2022 £'000	2021 £'000
At 1 October	17,165	19,748	5,804	42,717	55,684
Received during the year	1,124	24,764	17,933	43,821	43,539
Released to income during for the year	(533)	(24,241)	(9,998)	(34,772)	(56,506)
At 30 September	17,756	20,271	13,739	51,766	42,717

The deferred lease premium of £17.8 million (2021: £17.1 million), including a short term element of £0.5 million (2021: £0.5 million), relates to a lease premium received from the European Bioinformatics Institute. The deferred grant income of £20.3 million (2021: £19.8 million) relates to cash received in advance from third party grantors. Deferred income on trading contracts relates to amounts invoiced in advance of services performed.

16. PROVISIONS

	2022	2021
	£'000	£'000
Amounts owed in respect of employee share of investment gain	2,171	2,721
Amounts owed in respect of transferring faculty members	837	1,588

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

Amounts owed in respect of the closure of the Research Support Facility	71	673
Amounts owed in respect of bonuses	-	393
	3,079	5,375

					2022	2021
	Investments	Faculty	RSF	Bonus	£'000	£'000
At 1 October	2,721	1,588	673	393	5,375	5,520
Charge during the year	1,209	826	-	-	2,035	7,845
Released during the year	(1,759)	(7)	(74)	-	(1,840)	(16)
Utilised during the year	-	(1,569)	(528)	(393)	(2,490)	(7,974)
At 30 September	2,171	837	71	-	3,079	5,375

Under the terms of the translation policies in place at the time of the investments incorporation, employees are entitled to a share of any crystallised gains made in relation to certain of the programme related investments listed in note 10.

Certain members of faculty are awarded a transition allowance to continue their existing research outside of the Institute. The provision for faculty member transfers represents amounts committed to furthering this research at another institution. The release during the year represents amounts spent at the Charitable Company in lieu of being paid to another Institution. The timing and amount payable are uncertain as these are yet to be finalised with the receiving institutions.

In May 2019, GRL announced the decision to close the Research Support Facility (RSF) and mouse pipelines. The RSF provision represents redundancy and retention costs arising as a result of that announcement, which are dependent on how long an individual stays in employment. The facility closed in full on 30 September 2021.

In September 2021 GRL announced the decision to award bonuses to certain staff members who had performed above expectations in the year. The bonus provision represented an estimate of amounts expected to be paid under this scheme. No bonuses were awarded for the year ended 30 September 2022.

17. COMMITMENTS

As at 30 September 2022 there were £28.1 million capital commitments contracted but not accrued, including £1.4 million relating to conversion of the former Research Support Facility into a new logistics Hub and lab space, and £26.5 million in relating to the construction of a new building on Campus (2021: £3.0 million relating to the installation of new chillers across our campus buildings and a new modular building for sequencing). The Charitable Company has entered into an agreement with the tenant to cover the full cost of construction. The building is expected to be completed in early 2024. The commitment represents the proportion of the development work that is yet to be carried out. In December 2021, a decision was made by the project steering board to terminate the planned construction of the new modular building for sequencing.

The Charitable Company has made available a facility for its trading subsidiary, Genome Research Trading Limited ('GRTL'), to draw down cash in the form of a loan up to the value of £0.7 million, in order to provide working capital through the period of Campus closure as a result of the COVID-19 pandemic and until the Conference Centre can become profitable again. This is expected to be in the year ended 30 September 2023. As at 30 September 2022, £0.4 million had been paid to GRTL.

18. CONTINGENT ASSETS AND CONTINGENT LIABILITIES

The terms of the sale of the investment in Kymab included certain contingent consideration payable on achievement of certain milestones, as well as amounts held in escrow. The first escrow payment was received on 1 November 2021 and the second was due in late 2022. As the achievement of these milestones is outside of the control of the Charitable Company, no asset has been recognised as of 30 September 2022, other than the escrow payments receivable. Based on discussion with management, we expect future discounted cash flows in relation to these milestones to total £0.8m. Under the terms of the employee share scheme in place at the time the Company was incorporated, employees are entitled to two thirds of any crystallised gain (see note 16:

Provisions). The maximum future cash flows is £3.5 million and corresponding liability of £1.8 million.

Certain members of faculty are awarded a transition allowance to continue their existing research outside of the Institute (see note 16: Provisions). Faculty members may negotiate whether they use the funds to continue their work at the Charitable Company or transfer the funds to a new institute. A provision is recognised at the point that it becomes likely funds will be transferred. As at 30 September

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

2022, a total of £0.8 million had been awarded to individuals who had yet to reach an arrangement with a new institute (2021: £1.5 million).

19. OPERATING LEASES

The Charitable Company receives rental income under operating leases from tenants of the Biodata Innovation Centre ('BIC') and Bridget Ogilvie Building ('Ogilvie'), and the sublease of land to a subsidiary, Hinxton Hall Limited. As at 30 September 2022. The future minimum lease payments due to the Charitable Company under these arrangements is as follows:

	2022	2021
	£'000	£'000
Within one year	933	958
Between one and five years	1,736	2,185
More than five years	4,115	4,490
	6,784	7,634

Rental agreements range from two to six years in duration. BIC tenants are early stage companies in the field of genomics. The Ogilvie building is used for sequencing. There are no contingent rent agreements.

20. ULTIMATE PARENT UNDERTAKING & CONTROLLING PARTY

The directors regard the Wellcome Trust as the ultimate parent company and controlling party, which is the smallest and largest group to consolidate these Financial Statements. Copies of the Wellcome Trust Annual Report and Financial Statements can be viewed on its website – <https://wellcome.ac.uk/what-we-do/reports>. Alternatively, they may be obtained from the Company Secretary. The registered address for Wellcome Trust is 215 Euston Road, London, NW1 2BE. The Wellcome Trust's principal activities are to protect, preserve and advance health and welfare and to advance and promote knowledge of biosciences. Further information can be found in the Constitution section on page 55.

21. RELATED PARTY TRANSACTIONS

The Charitable Company is wholly-owned by the Wellcome Trust and has applied the exemption in paragraph 33.1A of FRS 102 "Related Party Transactions". The exemption permits the non-disclosure of transactions entered into between two or more members of a group, provided that any subsidiary undertaking which is a party to the transaction is wholly-owned by a member of that group.

Related party transactions with Trustees are disclosed in note 7. Details of the Company's subsidiaries as at 30 September 2022 are as follows:

Name of subsidiary and company number	Proportion Proportion		Principal Activity
	of ownership	of voting power held	
Genome Research Trading Limited (10058101)	100%	100%	Facilities Management
Hinxton Hall Limited* (03062160)	50%	50%	Education / Facilities Management
Genome Research Pension Trustee Limited (09186099)	100%	100%	Dormant
Mosaic Therapeutics Limited (12780154)	100%	100%	Cancer Research
GRL Construction Limited (09280062)	100%	100%	Construction

*The remaining 50% is held by the Wellcome Trust.

All shares held in subsidiaries are ordinary shares. All of the Company's subsidiaries are registered in England and Wales. Their registered address is 215 Euston Road, London, NW1 2BE.

The Wellcome Trust provide the Company with an open-ended facility to exchange dollars at a favourable rate. The Company recognised a gain in relation to this arrangement in the year ended 30 September 2022 of £1.6 million (2021: £0.5 million).

22. MOVEMENT IN FUNDS

2021	Incoming	Outgoing	Gains	2022
£'000	£'000	£'000	£'000	£'000

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

Building development	123,711	-	(4,321)	-	119,390
Capital equipment	16,941	6,842	(9,901)	-	13,882
Research fund	16,737	124,523	(124,048)	-	17,212
Restricted income funds	157,389	131,365	(138,270)	-	150,484
Endowment fund	670	17	-	-	687
Pension deficit	(133,200)	-	(3,000)	149,900	13,700
Total Restricted Funds	24,859	131,382	(141,270)	149,900	164,871
Investment fund	4,451	594	549	683	6,277
Unrestricted fund	13,821	53,964	(42,440)	-	25,345
Total Unrestricted funds	18,272	54,558	(41,891)	683	31,622
Total Charity Funds	43,131	185,940	(183,161)	150,583	196,493

	1 October			September	
	2020	Incoming	Outgoing	Losses	2021
	£'000	£'000	£'000	£'000	£'000
Building development	125,581	2,322	(4,192)	-	123,711
Capital equipment	9,620	17,207	(9,886)	-	16,941
Research fund	15,518	129,800	(128,581)	-	16,737
Restricted income funds	150,719	149,329	(142,659)	-	157,389
Endowment fund	654	16	-	-	670
Pension deficit	(198,800)	-	(1,700)	67,300	(133,200)
Total Restricted Funds	(47,427)	149,345	(144,359)	67,300	24,859
Investment fund	1,733	8,073	(5,422)	67	4,451
Unrestricted fund	7,875	64,040	(58,094)	-	13,821
Total Unrestricted funds	9,608	72,113	(63,515)	67	18,272
Total Charity Funds	(37,819)	221,458	(207,875)	67,367	43,131

The building development fund relates to expenditure on leasehold buildings. The capital equipment fund relates to funding for other fixed assets. The research fund represents net income relating to non-asset expenditure incurred in running the Charitable Company during the year. The investment fund represents the increase in fair value of the Charitable Company's investments in unquoted securities, net of amounts owing to inventors and employees. The endowment fund is an expendable endowment. Research, capital and building funds are subject to conditions set by grantors and are therefore restricted. The unrestricted reserves represent net income generated from non-grant funded activities that can be allocated at the discretion of the Directors.

The assets and liabilities of each category of funds were as follows as of 30 September 2022:

	Restricted	Endowment	Pension	Unrestricted	Total
	£'000	£'000	£'000	£'000	£'000
Fixed assets	162,440	-	-	-	162,440
Investments	-	-	-	5,080	5,080
Current assets	68,696	687	-	14,973	84,356
Current liabilities	(62,520)	-	-	13,740	(48,780)
Long term creditors	(17,224)	-	-	-	(17,224)
Provisions	(908)	-	-	(2,171)	(3,079)
Pensions	-	-	13,700	-	13,700
	150,484	687	13,700	31,622	196,493

The assets and liabilities of each category of funds were as follows as of 30 September 2021:

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

	Restricted Endowment		Pension Unrestricted		Total
	£'000	£'000	£'000	£'000	£'000
Fixed assets	167,864	-	-	-	167,864
Investments	-	-	-	4,398	4,398
Current assets	56,441	670	0	22,338	79,449
Current liabilities	(47,629)	-	-	(5,743)	(53,372)
Long term creditors	(16,633)	-	-	0	(16,633)
Provisions	(2,654)	-	-	(2,721)	(5,375)
Pensions	-	-	(133,200)	-	(133,200)
	157,389	670	(133,200)	18,272	43,131

23. COMPARATIVE STATEMENT OF FINANCIAL ACTIVITIES

		2021	2021	2021	2021
		£'000	£'000	£'000	£'000
	Note	Unrestricted	Endowment	Restricted	Total
					funds
INCOME					
Income from charitable activities		-	-	137,163	137,163
Income from other trading activities		64,040	-	12,156	76,196
Investment income		8,073	-	-	8,073
Interest		-	16	10	26
Total income	3	72,113	16	149,329	221,458
EXPENDITURE					
Charitable activities					
	4	(63,516)	-	(144,359)	(207,875)
Total expenditure		(63,516)	-	(144,359)	(207,875)
Unrealised gain on investments	10	67	-	-	67
Net income (expenditure)		8,664	16	4,970	13,650
Other recognised gains					
Actuarial gains on defined benefit pension scheme	8	-	-	67,300	67,300
Net movement in funds		8,664	16	72,270	80,950

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

Total funds (deficit) brought forward at 1 October	21	9,608	654	(48,081)	(37,819)
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Total funds (deficit) carried forward at 30 September		18,272	670	24,189	43,131
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24. POST BALANCE SHEET EVENTS

On 15 October 2022, Mosaic Therapeutics Limited ('Mosaic'), a subsidiary of GRL as of 30 September 2022, entered into an agreement to issue new equity to a partnership of venture capitalists. GRL retained a 10% shareholding in Mosaic, however the company is no longer considered a subsidiary or part of the wider GRL or Wellcome group of companies.

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2022**

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Reference and administrative information**Constitution**

The Company is a charity registered in England with the Charity Commission under the Charities Act 1993, as amended by the Charities Act 2011 (Charity registration number 1021457) and is a company limited by guarantee and registered in England (Company number 2742969). The sole member of the charitable company is The Wellcome Trust Limited (Company number 2711000, incorporated in the UK), as trustee of the Wellcome Trust (Charity registration number 210183, registered in England and Wales). In the event of the charitable company being wound up, the liability in respect of the guarantee is limited to £1.

Directors

The Directors of the Charitable Company who were in office during the year and up to the date of signing the financial statements were:

Jeremy Farrar (Wellcome Trust)	Nicole Mather
Kay Davies	Paul Schreier (Wellcome Trust)
Daniel Abrams	Daniel Mahony
Gilean McVean	Cheryl Moore (Wellcome Trust)
Cilla Snowball (Wellcome Trust—Governor)	

Company Secretary

Nadia Meliti

Registered Office

The Wellcome Trust
Gibbs Building
215 Euston Road
London
NW1 2BE

Principal Place of Business

Wellcome Genome Campus
Hinxton
Cambridge
CB10 1SA

Independent Auditors

Deloitte LLP
Statutory Auditor
1 New Street Square
London
EC4A 3HQ

Bankers

National Westminster Bank plc
King's Parade Branch
Bene't Street
Cambridge
CB2 3PU

Solicitors

CMS Cameron McKenna
Mitre House
160 Aldersgate Street
London
EC1A 4DD

Cambridge Employment Law
Stratford House
Ousden, Newmarket
Suffolk
CB8 8TN

Actuary

Jardine Lloyd Thompson
St James's House
7 Charlotte Street
Manchester
M1 4DZ

Hinxton, Cambridge
CB10 1SA
Charity Registration: 1021457
Company Number: 2742969