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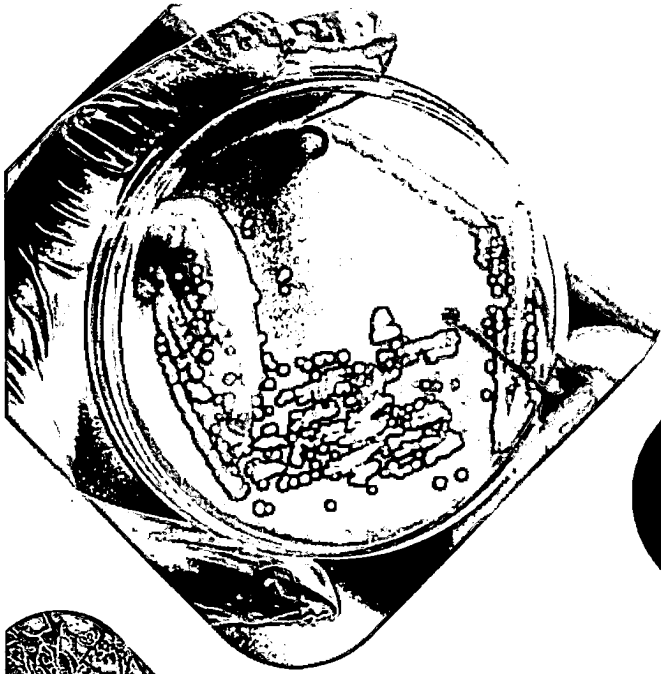


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Genome Research Limited

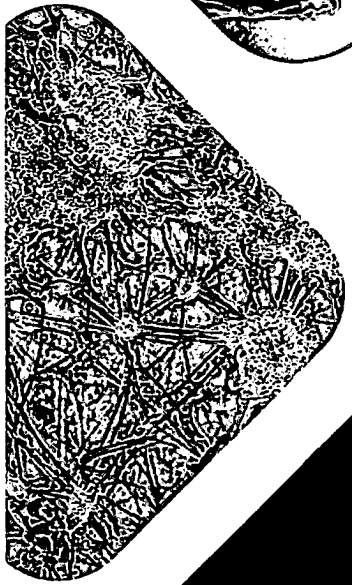
Annual Report and Financial Statements

For year ended 30 September 2019



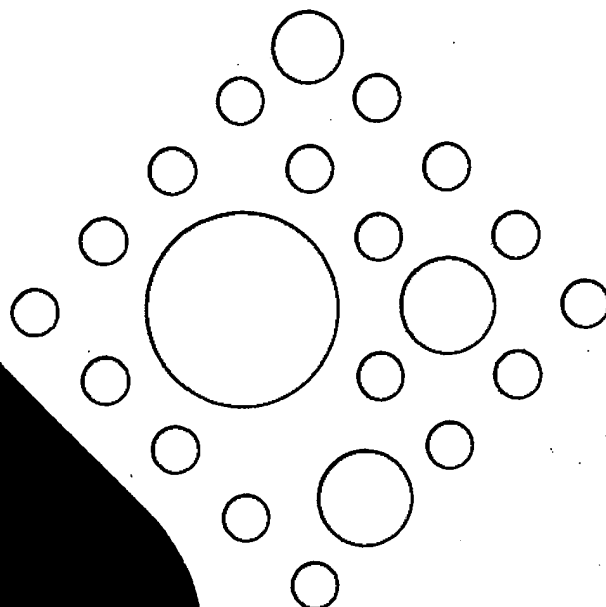
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Chief Executive's Introduction

Genome Research Limited ("GRL") encompasses a number of activities undertaken by our operation at the Wellcome Genome Campus. All of these activities work in the fields of Genomes and Biodata and are very much interlinked. The three pillars of activity are research, discourse, and enterprise and innovation which are delivered by the Wellcome Sanger Institute ("Sanger Institute") and Connecting Science based at the Wellcome Genome Campus.

This past year has been one of milestones and beginnings: we celebrated our 25th Anniversary and launched our newest programme. Fittingly for the Institute which helped to deliver the first open-access, free-to-use reference genome, we marked our quarter century by delivering the first reference genomes for 25 iconic UK species. This led to the launch of a new research programme: The Tree of Life.

Our newest programme, led by Professor Mark Blaxter, will drive the Darwin Tree of Life Project to create reference genomes for all 66,000 UK species. Not only will these sequences inform conservation efforts, they will also provide a rich seam of comparative genomic data for our new faculty to mine to understand life on Earth.

A paradigm shift in sequencing technologies has opened up routine, high-throughput whole-genome sequencing of human genomes.

Advances in single-cell technologies, machine learning, and cellular modelling are dissecting health and disease within single cells in individual tissues, over time. Our challenge and goal is to extract maximum scientific value from the data.

One such project is the UK BioBank Vanguard project, where, to date, our sequencing pipeline has delivered 35,000 volunteers' whole genomes.

By marrying the wealth of genomic data with electronic health records and other molecular characterisation tools, our researchers have discovered new gene variants associated with osteoarthritis, developed prognostic calculators for cancer, and created an artificial intelligence that predicts new pathogen emergence.

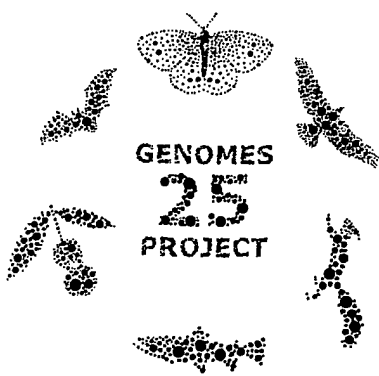
Our established approaches continue to deliver important discoveries. Our Parasites and Microbes Programme has compared the genomes of 81 species of roundworms and flatworms, including 45 that have never been sequenced before. This work provides the foundation for new insights into deeply debilitating diseases that are often neglected.

While our collaboration with the NHS – the DDD project – celebrated its eighth year of delivering diagnoses to children with developmental disorders. After 125 papers and more than 4,500 diagnoses, the project continues to deliver fresh insights into the mechanisms of inheritance, and has identified 49 previously unknown genetic disorders.

As we move into our next quarter century, the promise of genomic science to improve health and conservation is greater than ever, and we are privileged to help deliver the next wave of discovery.



Professor Sir
Mike Stratton,
Director, Wellcome Sanger Institute
Chief Executive, Wellcome Genome Campus



**GENOMES
25
PROJECT**

GRL's onsite cloud compute facility wins industry award



New species discovered in human gut microbiome

25 Genomes Project delivers new reference genomes

Wellcome Genome Campus wins Silver Engage watermark

Human Cell Atlas show how baby modifies mother's immune system

Yemen cholera outbreak analysed

Sanger signs up to Technicians Commitment

Oct

Nov

Dec

Jan

Feb

Mar

Deciphering Developmental Disorders project reaches major milestone

Method for personalised predictions of chronic blood cancers

Human host-microbiome interactions conference

Genome Lates talk: The radioactive dogs of Chernobyl

Sanger Institute joins Equality, Diversity and Inclusion coalition

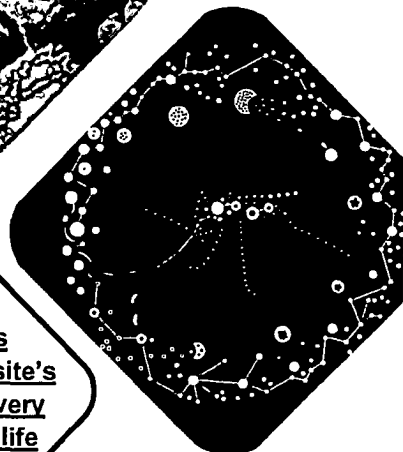
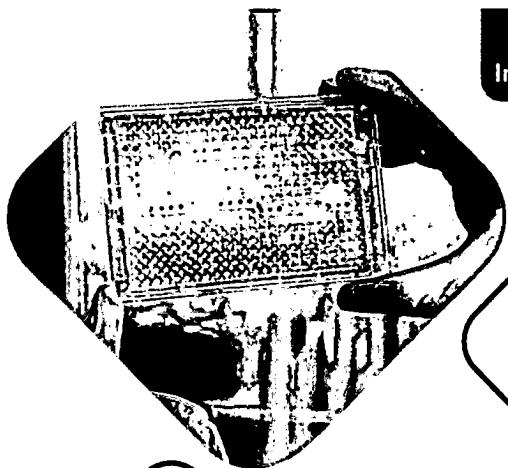
100 cancer organoid models created

Largest collection of worm reference genomes produced

Ian Dunham becomes new Open Targets Director

Tree of Life Programme and Darwin UK project begin





Gene mutations offer treatment options for MRSA

Malaria Cell Atlas reveals parasite's secrets at every stage of its life cycle

Cancer drug targets research lays foundations for precision medicine

CRISPR catches out critical cancer changes

Online course in Bacterial disease outbreaks

Cancer drug data to power next wave of discovery

Sanger co-sequencing 450,000 genomes for UK Biobank with DeCODE genetics

Apr

May

Jun

Jul

Aug

Sep

Genetic code of WW1 soldier's cholera mapped

Crusader DNA reveals they made love and war

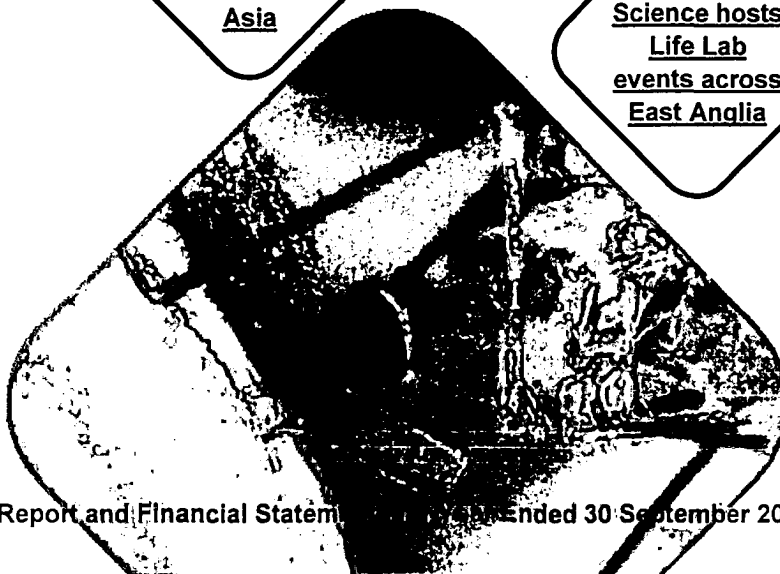
Global Strep A vaccine one step closer

Genomic monitoring shows spread of multi-drug resistant malaria in Asia

Diarrhoea-causing bacteria adapted to spread in hospitals

Connecting Science hosts Life Lab events across East Anglia

CRISPR reveals critical cancer-driving changes



Trustees' Report

The Directors of Genome Research Limited ("the Company" or the "Charity") who are also the Trustees of Genome Research Limited for the purposes of the Charities Act 2011, present their Annual Report and audited Financial Statements for the year ended 30 September 2019.

Objectives and activities

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

- Advance understanding of biology using genome sequences and biodata.
- Apply genome science for human health and other societal benefits.
- Foster 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:

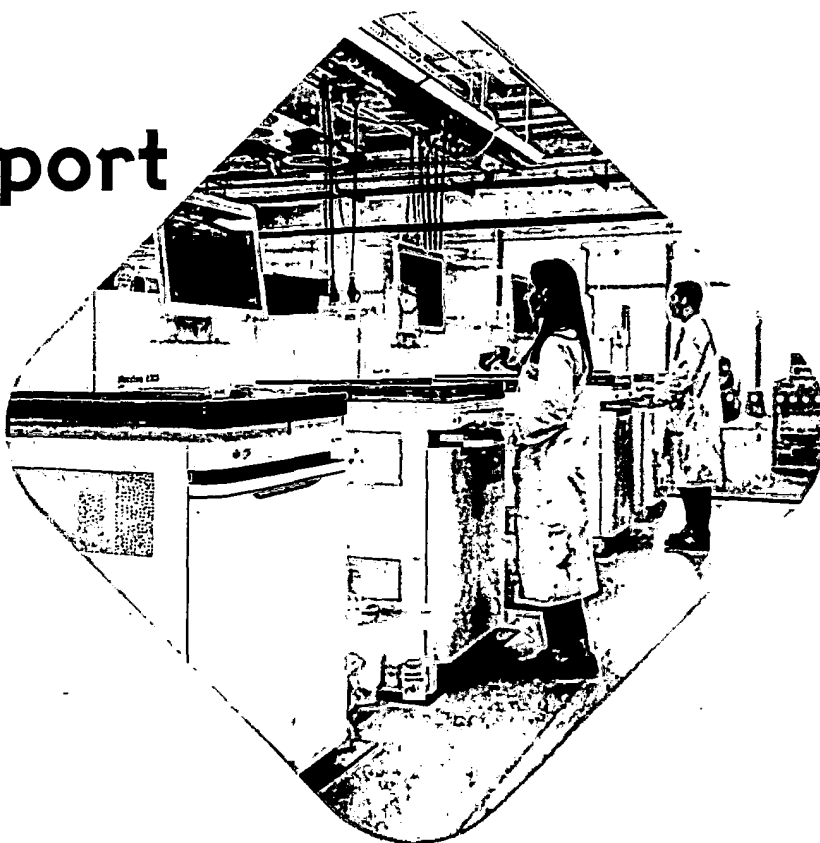
- Research (via the Sanger Institute)
- Discourse (via Connecting Science)
- Enterprise and Innovation.

Mission

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 genome



sequences to increase understanding of human and pathogen biology in order to improve human health.

To achieve this goal, we conduct basic and translational research delivered across five research programmes:

- Cancer, Ageing and Somatic Mutation
- Cellular Genetics
- Human Genetics
- Parasites and Microbes
- Tree of Life.

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, cellular genetics and mouse genetics 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 cells and mice. 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 and of human gene function. We aim to identify therapeutic and vaccine targets and to explore the genomic changes influencing sensitivity and resistance to such agents.

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.

Connecting Science

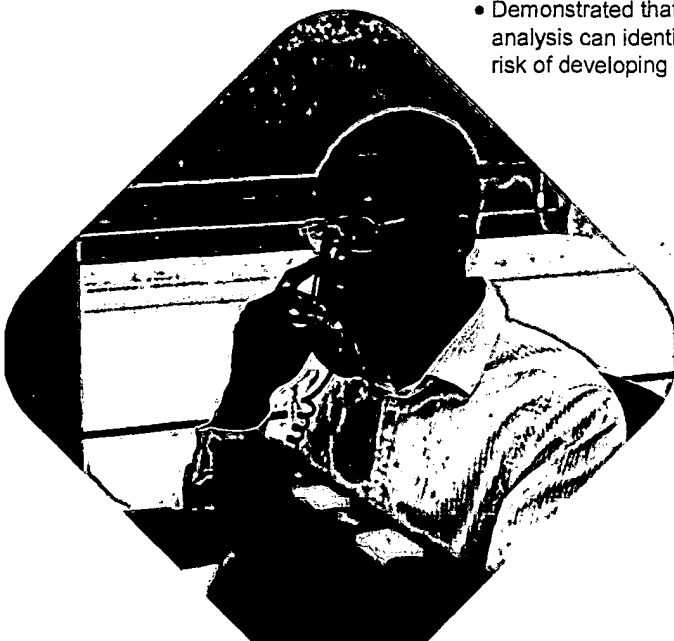
Connecting Science's mission is to enable everyone to explore genomic science and its impact on research, health and society. It connects researchers, health professionals and the wider public, creating spaces and opportunities to inspire new thinking, spark conversation, support learning, and measure attitudes.

Enterprise and Innovation

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

- grow the Campus' innovation culture
- support the translational and entrepreneurial opportunities that arise from Campus 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.



Strategic Report

Achievements and Performance

This year we celebrated many achievements made by our three activities – Sanger Institute, Connecting Science, and Enterprise and Innovation; and prepared for change with the announcement of the closure of our animal facility.

i) The Sanger Institute

These achievements highlighted below often reflect the results of many years of research. The majority of the Institute's research supports hypothesis-based investigation and the outcome of such activities cannot be predicted with certainty. Scientific research is inherently cumulative and progressive, opening up new knowledge, understanding and applications. However, the highlights below from each programme demonstrate how our people produce valuable information and insight in support of our overall mission.

Cancer, Ageing and Somatic Mutation

- Revealed that, by middle age, a large proportion of oesophageal tissue cells carry cancer-associated mutations.
- Demonstrated that genomic analysis can identify those at high risk of developing acute myeloid

leukaemia years before symptoms become apparent.

- Discovered that the seeds of both kidney cancer and Ewing sarcoma are sown some years before symptoms of disease occur.

Cellular Genetics

- Demonstrated how foetal and maternal cells communicate with each other to prevent the mother's immune system from attacking the baby's placenta, as part of the human developmental cell atlas work.
- Provided in-depth knowledge about genes that regulate Th2 cells, a vital part of the immune system.
- Showed that the widely used CRISPR-Cas9 genome editing method can cause more extensive DNA damage than previously thought.

Human Genetics

- After eight years, the cumulative output of the Deciphering Developmental Disorders Study reached 125 published research papers with 49 completely new disorders identified, and 4,500 diagnoses so far.
- Revealed that only a small fraction of rare, undiagnosed developmental disorders in the UK are caused by recessive gene variants.
- Uncovered 52 new genome variants associated with osteoarthritis in the largest genetic study of the condition to date.
- Found a genetic variation in people living in the Himalayas that could explain how humans adapted to high altitudes.

Parasites and Microbes

- As part of a global collaboration, revealed 800,000 new genes by comparing 81 species of flatworms and roundworms — parasites that infect one quarter of the world's population.
- Carried out the first pan-European

genome-wide survey of gonorrhoea, by sequencing 1,000 samples from 20 countries, to produce an accessible online map to share, compare and interrogate the data.

- Tracked a cholera outbreak house by house in Bangladesh, and characterised a recent outbreak in Yemen.
- Described 2,600 genes essential for life in the *Plasmodium* parasites that are responsible for half of the estimated 200 million malaria infections worldwide.

Tree of Life

The Tree of Life programme commenced in March 2019, to lead the UK wide initiative to read the genomes of all 60,000 complex species in the British Isles.

Other achievements of The Sanger Institute can be found below:

Faculty

Over the past year we have published 544 (2018: 480) research papers in peer-reviewed journals, of which 163 (2018: 136) had a Sanger Institute first and/or last author, which means they were either the leading author or the lead investigator for the study. Three quarters of Sanger publications are a result of collaborative partnerships, and authors from the Sanger Institute have been leading

contributors to a significant proportion of these publications.

Our discoveries have roots in both basic and applied scientific questions and are reshaping clinical management of inherited disorders, cancer and infection worldwide.

Associate Research Programme

Our Associate Faculty provides opportunities to enrich and diversify our science portfolio, enabling external organisations and scientists to access the Institute's intellectual environment and data-generation/data analysis infrastructure. The aim is to deliver scientific impact that cannot be achieved either (i) without Sanger's unique science and infrastructure; or (ii) through more conventional academic collaborations.

Awards and Prizes

The research achievements of Sanger's scientists have been recognised by many outside bodies through prizes and awards. The awardees range from Faculty members through post-doctoral fellows to graduate students.

Research Training

The Sanger Institute provides an exceptional intellectual environment and infrastructure for training and inspiring the next generation of leaders in genomics research. 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.

Graduate Programme

The Institute's cutting-edge academic atmosphere, coupled with its exceptional facilities and resources, provides a unique training environment. The Graduate Programme inspires and trains the next generation of leaders in genomic research. It is affiliated with the University of Cambridge, and our students graduate with a Cambridge degree, a globally recognised mark of excellence.

Specifically we operate a four-year PhD programme which accepts 12-13 graduate students each year from across the world. We are also part of the University of Cambridge three-year clinical PhD programme (jointly funded by ourselves and Wellcome), and usually accept 2-3 registrar-level clinicians per year through this. We also accept a small number of students each year from several other University of Cambridge-based PhD programmes. In addition, we have recently established an MPhil Programme which aims to recruit three students per year from low- and middle-income countries.

Including those funded by third parties, we currently have 74 PhD students and 3 MPhil students from 31 countries.

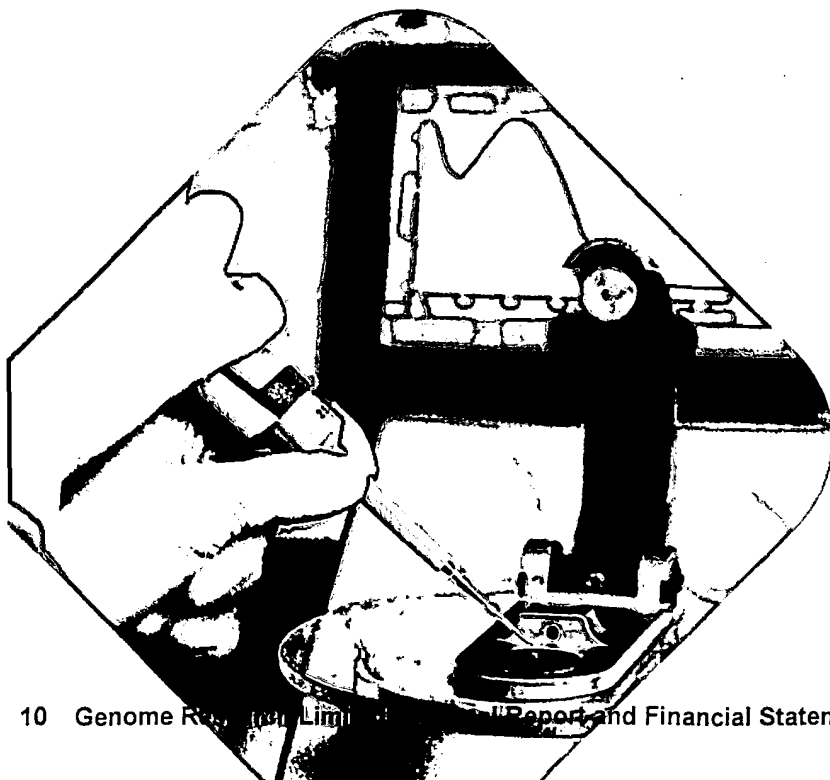
224 students have successfully completed their PhD degree at the Sanger Institute, of whom 19 were clinical PhD students. A further 24 students have successfully completed an MPhil degree.

The last ten PhD student cohorts have maintained an average four-year submission rate of 89 per cent, far exceeding the 70 per cent threshold expected by the Research Councils.

Next destination of our students

We keep a comprehensive record of all Institute-trained graduates.

Of the 248 graduate student alumni to date (224 PhD, 24 MPhil), 38 hold



faculty positions around the world. At least a further 109 are working as researchers in academia or in industry. In addition, 37 are training to be or are working as clinicians, many of whom are actively carrying out research, some as principal investigators. Overall, at least 74% of our graduate student alumni are currently working in scientific research and/or clinical roles.

Our graduates are to be found in many top research establishments such as Harvard, Berkeley, Stanford, Oxford, Imperial College, the Broad Institute, the Crick Institute, the Gurdon Institute and the London School of Hygiene and Tropical Medicine, and companies such as Illumina, GSK, Syngenta, AstraZeneca, Novartis and Roche.

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. 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 four core platforms:

- DNA sequencing (including sample management and R&D)
- Cellular Generation and Phenotyping facility
- Single Cell Genomics
- IT.

Animal facility closure

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. This decision was made after an extensive and robust internal review process, which revealed a declining amount of animal work being conducted by the science programmes in this and the next five year funding envelope. Due to this strategic change in scientific direction,

and the resulting significant reduction in scale, the operation of an animal facility as a major core facility is no longer viable for the Institute.

A project team and relevant working groups have been established to define the significant activities and work streams required to manage this complex and sensitive change programme, and to enable and deliver the closure with a transitioned glide path.

UK Biobank Vanguard Project

In February 2018 UK Biobank invited the Sanger Institute, along with other organisations, to submit a tender to sequence 50,000 whole human genomes. The Institute was notified of its successful bid in March 2018 and commenced sequencing for the project, valued at £30 million, in July 2018. To date, 35,000 samples have been read and the project is due to complete Spring 2020.

UK Biobank Main Phase project

Following on from the successful initiation of the Vanguard Project, the Institute has been awarded half of the £200 million project to deliver the whole-genome sequences of the remaining 450,000 UK Biobank volunteers, along with DeCODE genetics. It is expected that sequence data for this entire cohort will be generally accessible by early 2023.

Resources for the research community

Sanger Institute scientists generate a wide range of biological resources to support research conducted by our Faculty or collaborators. All are subsequently released for the wider research community to use, together with relevant and appropriate metadata. Biological resources include engineered, heterozygous mutant mouse embryonic stem cells, knockout mice, mutant zebrafish, and human iPS (induced Pluripotent Stem) cells.

Genomic science generates vast volumes of biological data and, in order to curate, organise and present data, we established publicly accessible databases and organised data resources. These include Decipher, COSMIC and others.

ii) Connecting Science

A review of our work over the past year can be found at wellcomegenomecampus.org/connectingscience, but some of our highlights include:

Training and Learning: The Advanced Courses and Scientific Conferences team have developed and delivered over 60 learning events, which have been held both on the Campus and in low- and middle-income countries around the world. These activities have reached around 3,000



research and healthcare professionals in person, and are complemented by a new range of free online courses, developed in partnership with FutureLearn. Initially focussed on pathogen genomics and disease outbreaks, these courses have increased both reach and diversity, with around 10,000 registered learners.

Engagement: The Public Engagement team have worked with partners across the region to deliver LifeLab – part of European Researchers Night, a Europe-wide celebration of the contribution of research to society. LifeLab activities are particularly targeted in Ely and Peterborough, to reach audiences with less exposure to engagement with science. In November 2018, the Wellcome Genome Campus was awarded a Silver Engage Watermark by the National Coordinating Centre for Public Engagement in recognition of how public engagement is valued and recognised across the Campus.

Meeting and Event Spaces: The Conference Centre has developed and refined its services and facilities, including commitments to increase its environmental sustainability. It has maintained an impressive level of sales growth by attracting new businesses from the scientific community.

Society and Ethics Research: The team have continued to explore issues



around 'big data' — its ownership and use — both genetic sequence-based, but also other health-related data such as from a fitness tracker. They have published numerous papers, and contributed to national initiatives, translating their findings to policy and practice. Skills development and support for the genetic counselling community has continued to be another key area of work.

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 to then deliver products and services.

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. We currently have the following spin-outs, held as programme investments:

- Congenica
- Kymab
- VHSquared
- Microbotica.

Licensing our technologies and industry collaboration continues to support global research and development:

- COSMIC – We have continued to see strong licensing growth of our COSMIC database with revenues exceeding £1.4m in the year.

- CRISPR Libraries – Sanger gene-editing resources have been adopted by multiple industry and academic groups to support their respective translational efforts.

- Immuno-Oncology Collaboration – We have entered into an exciting collaboration with US pharmaceutical giant BMS to identify and validate new approaches for immuno-oncology therapies.

In order to support innovation from all sources, we are pro-actively engaging and integrating with the Sanger science base – at the faculty, post-doc and student levels. One output of this support has been the establishment of a new company, Sano Genetics, founded by three former Sanger PhD students.

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 continues to exceed expectations. The Biodata Innovation Centre (BIC) reached 100% capacity in early 2019 with nine organisations from the private and public sector. Our tenants, from Campus spin-out companies, through Genomics England Limited activities, to



organisations from mainland Europe, Asia and Silicon Valley in the United States, represent diverse aspects of the genomics value chain. Feedback continues to be exceptionally positive and, to date, all companies have renewed their leases.

We have continued our focus on building a sense of community within the BIC and stimulating engagement with the wider Campus. One such initiative is the Degree Apprenticeship in Bioinformatics being delivered by Anglia Ruskin University with the Wellcome Sanger Institute as a key partner. A number of companies within the BIC have also recruited apprentices making this a Campus-wide effort to nurture such specialist talent.

Broader efforts to inspire Campus entrepreneurship build upon the Bench to Boardroom seminars. Additionally this year we hosted BioBeat – a half day summit 'to explore building sustainable healthcare businesses with biodata' which attracted over 150 attendees from Campus and beyond.

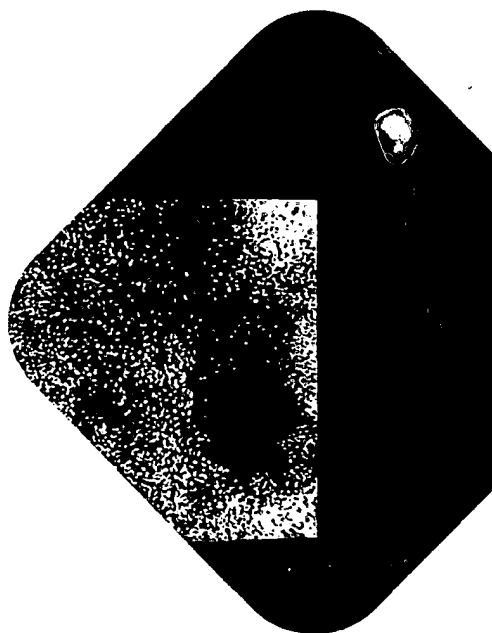
Financial review

Results

This is the third year of the 2016-2021 quinquennium award from Wellcome which GRL can draw down as required to meet its objectives as set out in the 2016-2021 scientific plan.

The net deficit for the year, after other recognised losses of £80.7 million (2018: £26.4 million gains) was £94.2 million (2018: £25.4 million surplus). Other recognised losses have arisen due to the accounting requirements of the defined benefit pension scheme.

Income for the year totalled £152.4 million (2018: £144.8 million) of which 64% (2018: 81%) was provided by Wellcome. The higher level of Wellcome funding in the prior year was primarily related to an investment in a fleet of new sequencing machines and associated IT infrastructure. Resources expended in furtherance of its activities totalled £164.3 million (2018: £147.3 million). Net expenditure for the year was £13.5 million (2018: £1.0 million), arising as a result of expenditure incurred on grants for which the corresponding income was



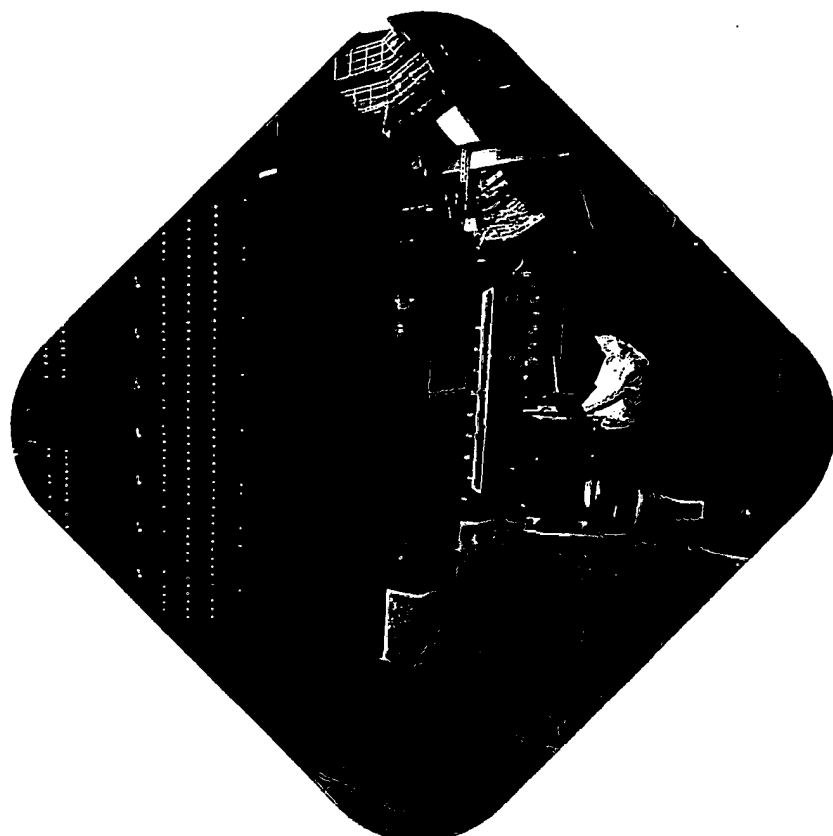
recognised in earlier periods and losses on unquoted investments.

The defined benefit pension scheme deficit of £203.0 million (2018: £113.9 million) representing the year-end funding position of the scheme is recognised in the financial statements as a 'pension liability' on an FRS 102 basis. This deficit represents the difference between an assessment of the liabilities of the pension funds and the current value of their underlying assets. The amount of the 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 2019 there has been a 1.0% decrease in the discount rate assumption reflecting the decrease 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 2015. This valuation showed that the plan was 82% funded with a deficit of £24.8 million.

An approximate annual update as of 31 December 2017 was carried out and showed that the fund was 96% funded with a deficit of £9.8m. The next full actuarial valuation is due by 31 March 2020, and expected to be



approved on 5 December 2019.

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.

Wellcome agreed to fund £6.2 million per annum over five years to 31 December 2020 payable to GRL under the terms of the guarantee. £3.1m was paid in September 2019 and Wellcome committed to pay £3.1m in December 2019.

Reserves policy

The total net liability at the end of the year was £38.6 million (2018: £55.6 million net asset), arising as a result of the pension deficit of £203.0 million (2018: £113.9 million). 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 deficit) at the end of the year were £164.4 million (2018: £169.5 million).

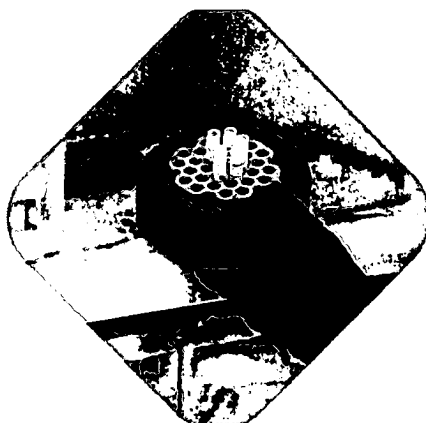
The restricted funds of £157.5 million (2018: £163.4 million) consist of capital funds for buildings and capital equipment, a research fund and an endowment fund. The year-end fund

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 represents funds for activities specified by the donor. The movement on reserves is shown in note 20 to the financial statements.

Investment funds of £1.7 million (2018: £2.2 million) relate to gains on unquoted investments less amounts owing to staff and inventors in relation to these gains. Investments are measured at fair value and as such are subject to variability.

The unrestricted funds of £5.1 million (2018: £3.8 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 charity 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.

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.

Going Concern

GRL's total net liability at the end of the year was £38.6 million (2018: £55.6 million net asset); however, as described above, this has arisen due to the accounting requirements of the defined benefit pension scheme. The latest full funding valuation of the scheme indicates that GRL's current schedule of contributions is sufficient to meet the requirements of the scheme by December 2020. Total reserves before the pension deficit were £164.4 million net assets (2018: £169.5 million).

Committed costs are within the core award from Wellcome and management have sufficient discretion over the spend in other areas to ensure expenditure remains within budget; even in the event that a liability were to arise as a result of the matters disclosed in note 11. After considering the 2019-20 budget and

strategic plan for 2016-2021, income under trading contracts and the award from Wellcome for 2016-2021, the Directors are satisfied that it is appropriate to adopt the going concern basis in preparing the financial statements of GRL.

Plans for future periods

Genomes constitute enormous quantities of data and their advent has fostered a dramatic expansion of computing — and mathematics-based biological sciences together with infrastructure to support their handling and interpretation. Their influence and impact will further accelerate over the next couple of decades through more research, diverse applications, a flourishing of commercial entities using them and increasing familiarity of individual human beings with their own genomes, attended by societal consideration of their implications. GRL and partner organisations at the Wellcome Genome Campus will continue to provide a foundation for a broad front of activity over the next year to maximise scientific, health, economic and other benefits from Genomes and Biodata.

The Sanger Institute's science will further explore rare and common genetic diseases, cancer and infection through studying genome variation, naturally occurring and engineered, to:

- 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.

In this coming year we will develop our new research programme – The Tree of Life. It is leading the UK-wide collaboration between genomic, conservation and ecology partners to produce reference genomes for all species of complex organisms found in Britain.

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

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

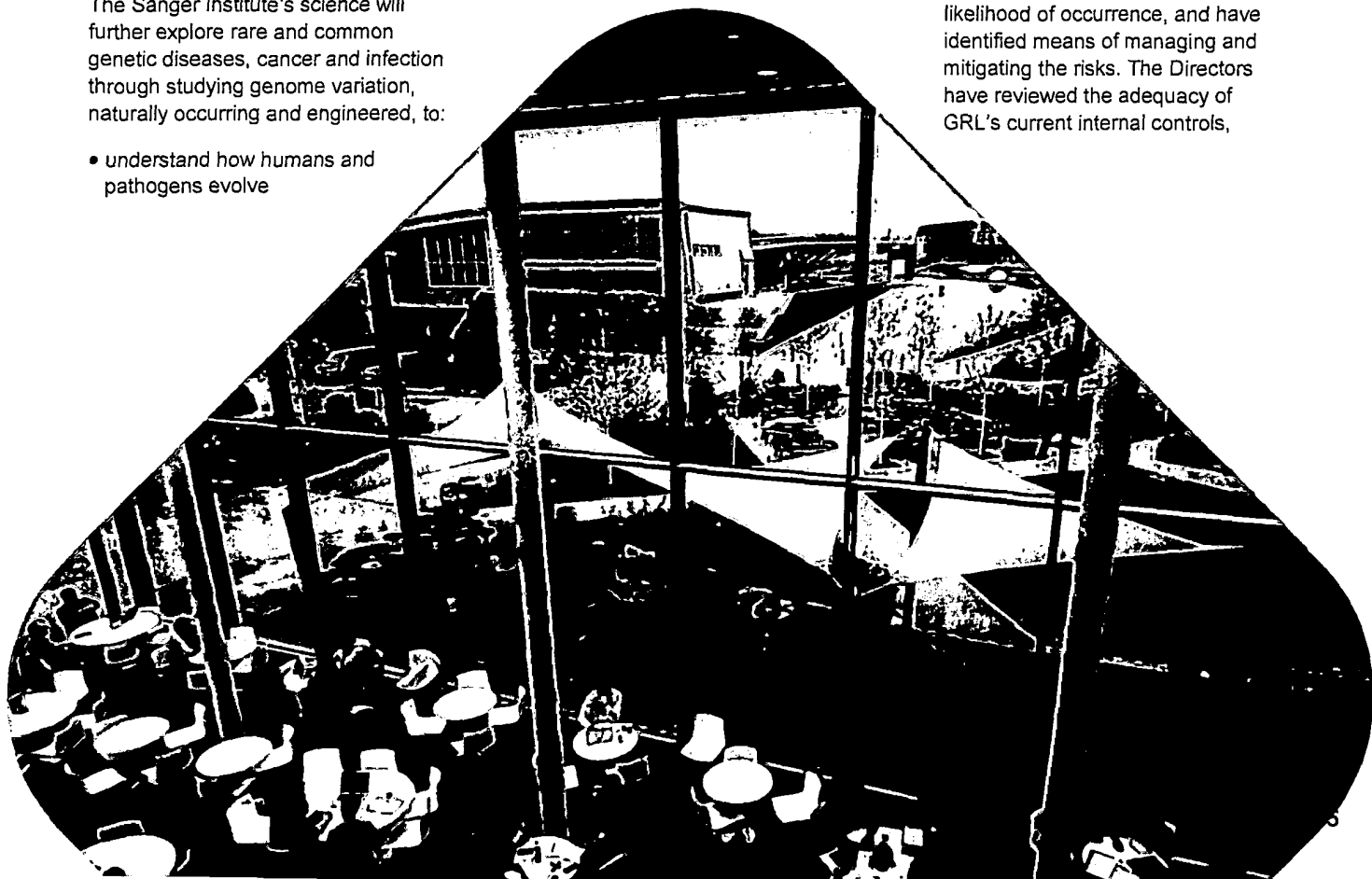
In the coming year we will seek to

improve the visitor experience for the different audiences who are hosted on Campus, expand the offer of online courses, and provide leadership in areas of policy and practice relating to training, learning and engagement.

The *Entrepreneurship and Innovation* team will extend their efforts to integrate the Campus' diverse activities, in order to realise new collaborations and translational opportunities created by co-location. Based on learnings from the BIC they will support development of the Campus Vision and strategy development around growth of the innovation and entrepreneurship on the Campus. They will continue to explore how best to work with Wellcome to better deliver impact from the Institute's flagship science.

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 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 at each meeting. It monitors progress against actions arising to address the risks identified, as well as internal audit's own assessment of risk. It also approves the annual risk-based internal audit plan that takes into consideration the major risks identified by management and the directors. It also monitors the reports from internal audit and progress against the audit plan and the progress against management actions arising from its reports.

The specific risks currently considered by the Directors to be the most serious are detailed in the table on page 17.

Structure, governance and management

GRL is a registered company, a registered charity and is governed by its memorandum and articles of association. GRL is considered to be a wholly-owned subsidiary of Wellcome Trust for accounting purposes. Its sole member is the Wellcome Trust Limited, as corporate trustee of the Wellcome Trust which approves the GRL Board of Directors. All Directors receive an induction. The performance of the Directors is monitored by the Wellcome Trust and any additional development and training will be advised and managed by the Wellcome Trust as necessary.

Genome Research Trading Limited is a 100% subsidiary 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.

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. During 2018/19 the GRL Board met on three occasions.

A list of Directors, including details of 3 appointments and 2 resignations in the year, is shown on page 42.

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 implementation of GRL's strategy. The GRL Executive Board includes representatives from each of the main themes of GRL's strategy: Sanger Institute, Connecting Science, and Enterprise and Innovation.

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 Management 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 and for oversight of the Enterprise and Innovation strategy.

Reporting and internal control

The GRL Board receives reports from the BoM and the Campus Management Board on the following specific matters:

- risk management policies and robustness of the

internal control environment;

- conflicts of interest policy;
- any serious issue affecting the staff of GRL, including health and safety, HR policies and employment disputes; and
- financial budgeting and reporting.

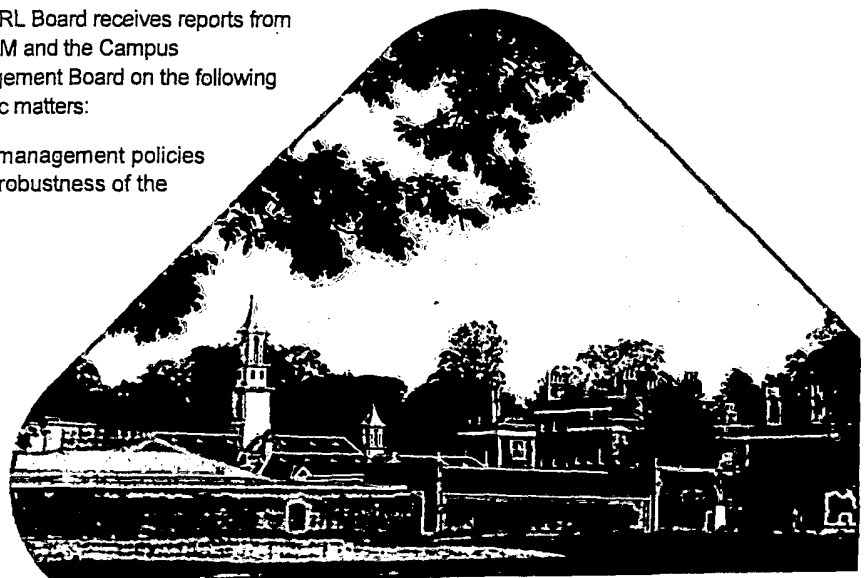
Management are responsible for the design and implementation of the systems of internal control, which are designed to provide reasonable assurance against material misstatement or loss. They include:

- a five-year strategic plan and an annual budget approved by the directors;
- regular consideration by the Directors of financial results;
- regular review of key processes by internal audit;
- delegation of authority and segregation of duties; and
- identification and management of business and financial risks.

Audit and Risk Committee

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

- the governance structure;
- the effectiveness of financial systems, processes and finance function;
- the systems of internal control;
- the integrity and transparency of



Strategic Risks

Risk	Nature of risk	Management of risk
Campus vision	As academic research is at the heart of the Campus we need to ensure that the implementation of the Wellcome Genome Campus vision enhances discovery research.	<p>Effective governance structure in place to support the GRL strategic plan. Campus development team contains experienced and skilled staff to develop the Campus vision after the outline planning approval stage.</p> <p>Research gateway policy for allowing new entities to be part of the Campus ensures that the scientific theme of 'genomes and biodata' is supported.</p> <p>Project Board in place to support project team on delivery of the master plan. Regular consultation and communication activities with surrounding communities.</p>
Recruitment and retention	<p>Genomics is a specialist field within science with strong competition for a limited pool of senior people with the right leadership skills. Potential difficulty in encouraging relocation.</p> <p>Potential restriction/complication of movement of people, recruitment and retention due to Brexit and the perception that the UK is a less welcoming environment.</p>	<p>Strong focus within the organisation on culture and values, equality, diversity and inclusion and we will build on the progress that has already been made during 2019 to enhance the culture within the organisation and maintain the Campus as an attractive location to work in. We have made an Athena Swan silver application during 2019.</p> <p>Continued focus on remaining at the forefront of scientific research in genomics to maintain our world leading reputation. Implementation of culture development plan throughout 19-20.</p> <p>Brexit scenario is still uncertain, but to mitigate the impact we have increased our support of VISA and residence support for staff.</p>
Remaining at the forefront of scientific research	Since both science and the technologies used within it are constantly evolving, we need to ensure that we adopt new technologies when they become available and maintain the novelty of our research.	<p>Scan the markets serving our technology requirements for new technologies and adopt them when they become available. We will establish 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 (ISAB) and collaborate with other Institutes and bodies to ensure we remain at the forefront of science. We will continue to work with our Associate faculty to develop new ideas and areas of research.</p>
Funding	<p>Restrictions in the amount of funding available would significantly impact the ability of the Institute to operate at scale and remain a world leading Research Institute.</p> <p>Impact of Brexit on inflation and future grant availability is uncertain.</p>	<p>Continue to deliver world leading science at scale that will impact on health in the future. Ensure that we obtain value for money in our supply arrangements and capital investment decisions. Work with Wellcome to influence UK funding bodies, to create EU equivalent funding post Brexit. Manage the closure of the RSF and the reallocation of resources.</p> <p>Review of third party grant strategy to ensure all opportunities are fully taken advantage of. Monitor the impact of inflation on funding and ensure appropriate terms are built into our contracts.</p>
Data & cyber security	Cyber security threats are constantly changing posing ongoing challenges to address the risks to the confidentiality, integrity and availability of data	Perform regular testing and have a prevention plan that encompasses user education as well as specific protections. An Incident response plan is in place to enable rapid recovery and we monitor our progress in mitigating specific risks through a detailed risk register.
Brexit	Uncertainty around Brexit deal impacting ability to work with EU members and citizens and security of supply chain. Current grant recipients and procurement contracts may be adversely affected by sterling weakness and volatility.	Key risks around Brexit considered to be the impact on recruiting scientific staff and funding opportunities, as detailed above, and the possible interruption of key elements of the supply chain. A category management approach to procurement enables more resilience to be achieved through working with our suppliers. Continue to work closely in this area and with Wellcome to share information and identify additional risks.

the financial statements;

- compliance with legal and regulatory requirements;
- policies and procedures relating to fraud or misappropriation;
- the external and internal auditors' qualifications, independence and performance; 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 renewed. Members are as follows:

- Mr Stuart Henderson (acting Chair)
- Ms Nicole Mather
- Mr Richard Eales (Wellcome Trust).

The Committee has met three times during the year.

Remuneration

The Board of Directors ensures that remuneration arrangements support the strategic aims of GRL, including approving senior staff salaries.

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.

Conflicts of interest

GRL has a policy on conflicts of interest, which applies to directors and employees. The policy requires disclosure of relevant interests covering commercial and academic interests. The policy defines those financial interests, consultancies and external appointments 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:

- The Board of Directors; and
- 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 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.

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

Auditor

The auditor, Deloitte LLP, have indicated their willingness to continue in office and a resolution concerning their re-appointment 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.

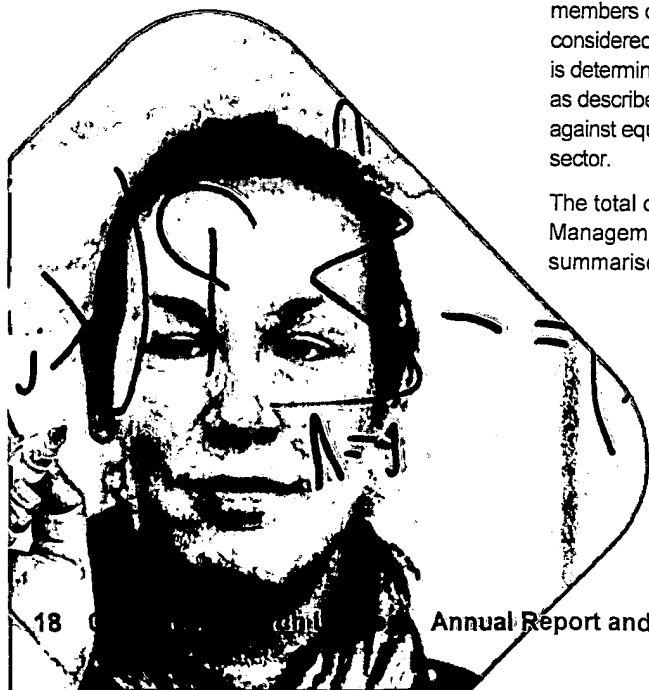
The Directors are satisfied that due regard has been given to the public benefit guidance published by the Charity Commission as required by section 17 of the Charities Act 2011.

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. The following were achieved or recorded during the reporting period:

- With increasing scientific initiatives, the number of new biological risk assessments continues to increase. Currently 77 different organisms are used by GRL. The annual audit of active biological risk assessments was undertaken. 66 new or reviewed assessments have been undertaken during 2019.
- Our musculoskeletal disorder prevention programme has been incorporated into a wider strategy: Wellbeing@Work. This combines proactive and reactive programmes to prevent and support the top two risks on Campus: stress and mental wellbeing and musculoskeletal disorders.
- In 2019 the Campus Health, Safety,



Wellbeing and Environment week engaged the Campus community with activities on laboratory and fire safety, physical and mental health, mindfulness, and the Campus environmental strategy to minimise waste and manage energy.

- GRL has a rolling programme of fire risk assessments for the current 16 buildings on Campus, as well as fire safety training for the whole Campus community. A focus in 2019 has been reducing the number of outstanding actions.
- 1,333 (2018: 1,607) individuals attended 118 (2018: 125) training sessions, delivered in 23 different topics, ranging from general induction and risk assessment, to more specialist training such as first aid and ergonomic programmes. 93% of attendees rated training enjoyment as "Excellent" or "Good".
- 75 (2018: 75) laboratory inspections are carried out annually. Our focus in 2019 has been to improve individual laboratory scores for all areas of inspection.
- We agreed control measures to segregate vehicles and pedestrians at the Conference Centre.

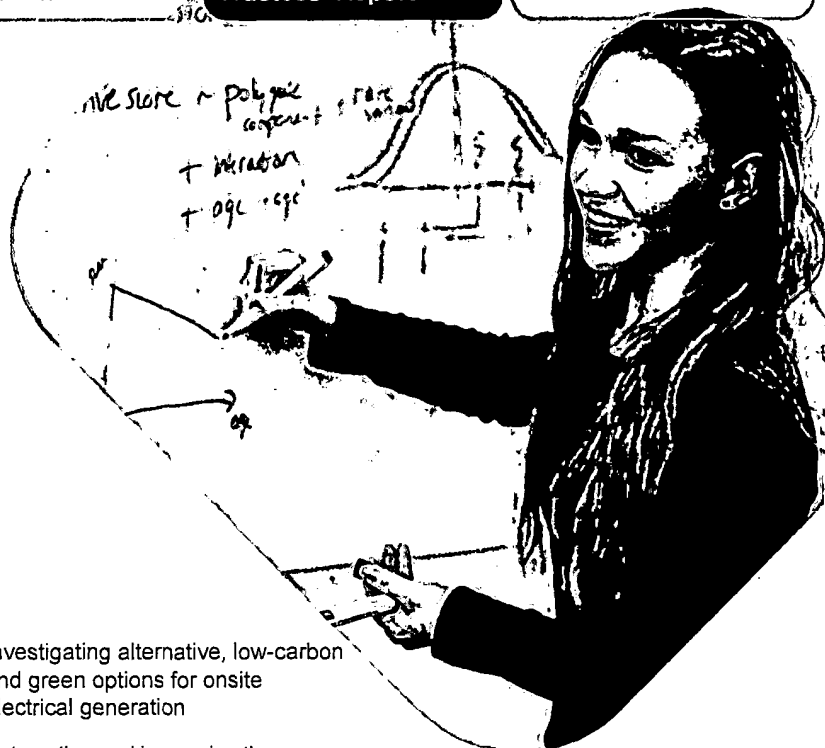
Environmental Statement

The Environment and Green Travel Manager is responsible for the strategic direction and management of the environmental impacts of the Campus. These include the Campus Environmental Management System ISO 14001:2015, and operational management of water and effluent, and the impacts of travelling to work. She has direct support from the Energy Manager and the Facilities Managers for Waste, Lab Services/ Hazardous Waste and Grounds to reduce our two biggest impacts; Energy and Waste.

In 2019 the Campus became ISO 50001:2018 certified, the latest Energy Management Standard. Our target is to reduce our energy consumption by 5% against floor area from 2018 to 2022.

Key environmental initiatives planned over the coming year are:

- Continuing our programme of energy efficient and energy saving projects



- Investigating alternative, low-carbon and green options for onsite electrical generation
- Automating and increasing the number of gas, electric and water sub metering across site to analyse use
- Continued management and diversion of hazardous waste to offsite to ensure the best disposal route for lab waste, with associated cost savings
- Crisp packet recycling in place, and reviewing general waste and recycling streams, including increased communication to staff
- Increased communication regarding water and effluent impact, especially trade effluent consents
- Wetlands and biodiversity improvement programme alongside the Grounds Team and Wildlife Trust
- Using technology to reduce unused capacity on the Campus Bus Service.

Employment and diversity

Employment

GRL is committed to employment practices, systems and policies that ensure legislative compliance and follow best practice, while promoting a working environment that supports the realisation of the Organisation's scientific purpose. Policies and processes are reviewed on a regular basis, to ensure they remain compliant and appropriate to the needs of the organisation.

HR has evolved its services, with a

focus on greater levels of support for line managers, to ensure we effectively support all aspects of people employment matters. We are mapping our processes, with the aim of minimising paper and creating clearer, more effective transactions. Refining our HR system is a core enabler for this, and we will use the next 5-year system review that occurs shortly into the next QQ, as a point in this journey.

We also continue to identify and implement projects that aim to increase employee engagement and the Institute's brand externally. This includes:

- on-Campus banking provision. We partnered with Barclays Bank to give staff on-site access to core facilities during working hours.
- a new social media presence, to develop greater access to talent (especially next generation).
- new induction processes, with Campus-wide promotional videos to reinforce our exceptional workplace.
- signing up to the Technicians Commitment to raise the visibility and recognition of our Technicians.
- continuing to develop internal talent through our 'Grow your Own' initiatives, and expanded our Apprentice numbers (including a Bioinformatics apprenticeship in

partnership with Anglia Ruskin University). We intend to launch a Management Trainee scheme in 2020.

- new methods of recognising and rewarding our employees through the Reward Hub (to thank colleagues) and Stars for Science (to financially reward exceptional effort).

Equality, Diversity and Inclusion Programme

In 2018, we received a Whistleblowing claim that was investigated and concluded last year, with none of the allegations upheld. However, the Investigation did propose several recommendations for areas that the Institute could address and in particular, challenged the gender imbalance we see in our faculty (7 of 28 are women). The Institute has reflected substantially on this and have embedded significant elements of operational change, to enable greater transparency of decision making. A programme of change has been developed and communicated, to develop this position. Core activity will focus on greater transparency of processes within Faculty, alongside more direct action to support career progression in science. In addition to these specific undertakings, wider business as usual projects have been launched that place a focus on governance, culture and our Equality, Diversity and Inclusion strategy.

Our global reputation for excellence is underpinned by our commitment to

fostering an environment where staff and students from all backgrounds can thrive. The Equality, Diversity and Inclusion ('EDI') Programme at GRL catalyses organisational culture change, develops partnerships, communicates activities and champions our women in science work at a national and international level.

We have made significant progress in:

- Impact on senior women leaders
- Improved career and leadership opportunities for women
- Enhanced policies, support and positive cultural changes
- Nurturing a family-friendly and inclusive Campus.

The EDI Programme is supported by an EDI Forum, which provides long-term leadership and champions the roll-out of our EDI strategy across the organisation and beyond. Our Campus-wide 'Equality in Science' ('EiS') initiative raises awareness of issues affecting under-represented and minority groups in science and supports our grass-root staff engagements networks – the LGBT+ and Parent/ Carers' networks.

There is strong and sustained commitment to the programme, as demonstrated by an annual rolling EiS and Athena SWAN budget and the work is supported by 2.4 FTEs – Head of EDI, EDI Manager and EDI Project Co-ordinator.

We see a steady positive increase within our highest pay band, currently 46% women, and we are committed to ensuring gender balance at this level within the next three years. Our 2018 GRL-wide gender pay gap has decreased from 10.19% median and 16.15% mean to 9.50% median and 13.88% mean: [sanger.ac.uk/about/equality-science/gender-pay-gap-report](https://www.sanger.ac.uk/about/equality-science/gender-pay-gap-report). We have committed to the ambitious target of reducing our gender pay gap to within 5% by grade by 2022.

GRL's policy in respect to disabled employees is detailed in our [equal](#)

opportunities policy.

Learning and Development

Our strategy to grow the capability and potential of managers and employees is based on providing an extensive range of innovative learning and specialist development interventions and advice.

The organisation boasts a comprehensive portfolio of learning and development opportunities. In May 2016, a range of leadership development programmes were launched and since then 330 supervisors, managers and leaders have benefited. These programmes have been crafted to meet the needs of both scientific and non-scientific managers operating at different career stages and levels, including training for postdocs.

Furthermore, GRL now has an established in-house Mentor and Coach Network of almost 40 internal mentors and coaches to support lifelong learning.

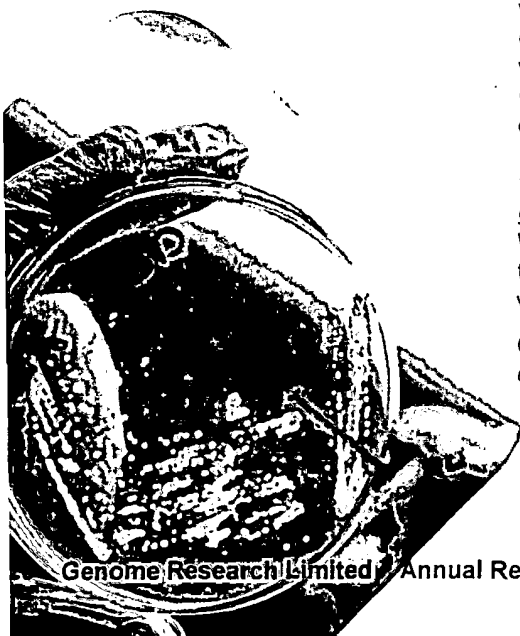
Improving our operational processes and systems

We are initiating a review of the processes, culture and systems that underpin the effectiveness of our scientific operations. Due to the exponential increase in the volume of samples Sanger sequences each year, and the increased complexity of new sequencing technologies, a complete redesign of the support architecture that underpins our sequencing processes is required. This project is in the initial planning stages, but we hope to be in a position to begin implementation by the start of the next five year funding period.

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



Lord David Willetts,
Chair of the Board of Directors,
2 December 2019



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.

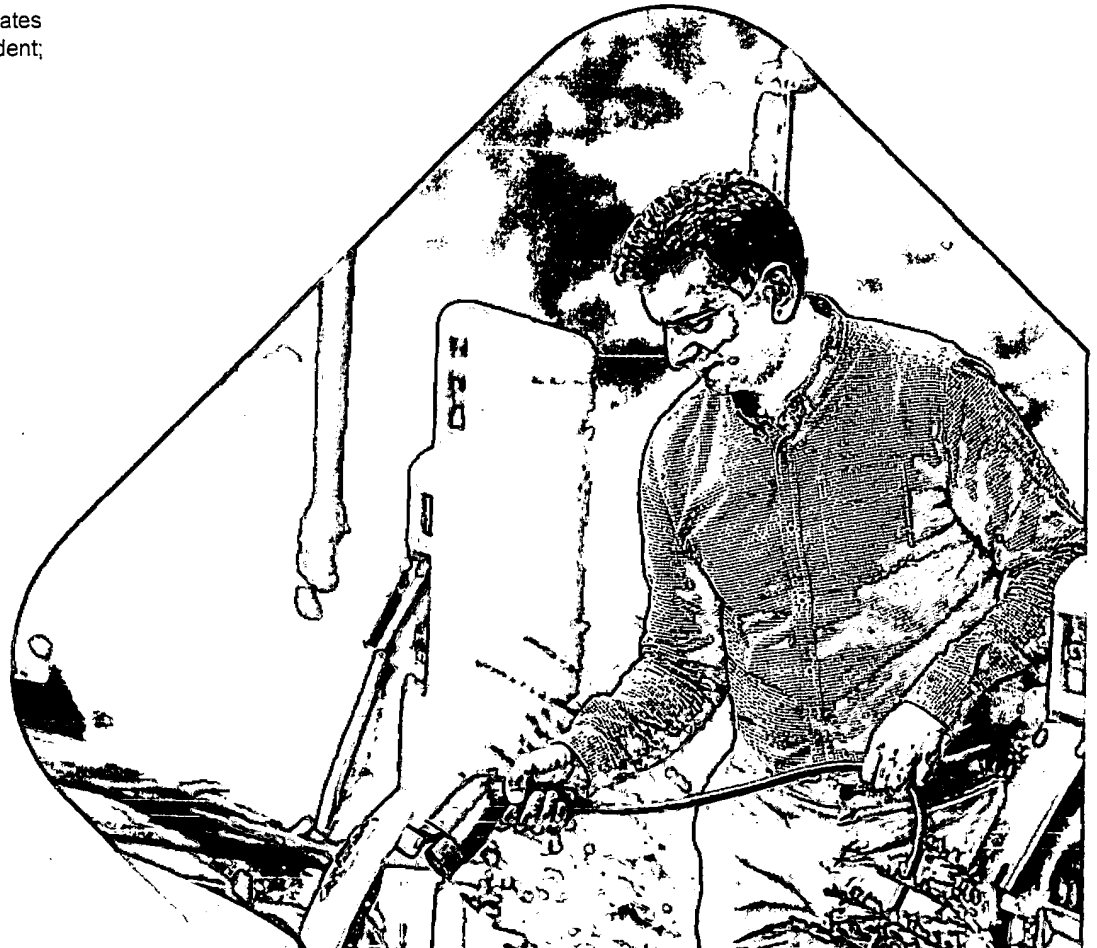
Disclosure of information to auditor

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.



Independent Auditor's report to the Directors/ Trustees of Genome Research Limited

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 2019 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 of which comprise:

- the statement of financial activities;
- the balance sheet; and
- the related notes 1 to 20.

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

We are required by ISAs (UK) to report in respect of the following matters where:

- the trustees' use of the going concern basis of accounting in preparation of the financial statements is not appropriate; or
- the trustees have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the charitable company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

We have nothing to report in respect of these matters.

Other information

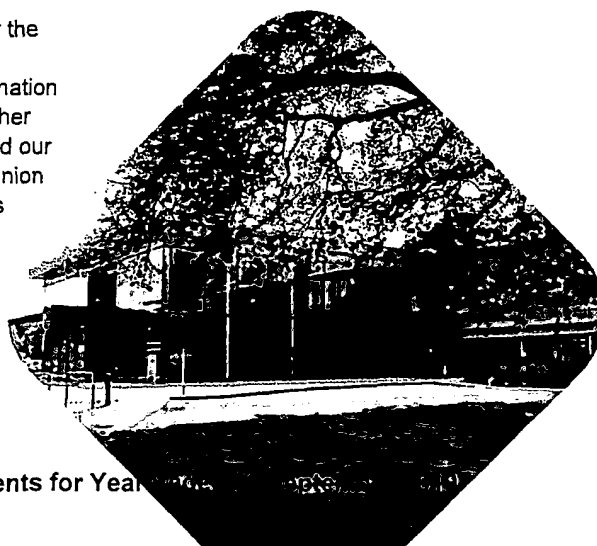
The trustees are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the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

In connection with our audit of the financial statements, 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 obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. 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 respect of these matters.

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 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.

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.

Terri Fielding

Terri Fielding (Senior statutory auditor)

For and on behalf of Deloitte LLP
Statutory Auditor

London, UK

02 December 2019.

Financial Statements

Genome Research Limited

Statement of Financial Activities (incorporating an Income and Expenditure Account)
for the year ended 30 September 2019

		2019	2019	2019	2019	2018
		£'000	£'000	£'000	£'000	£'000
	Note	Unrestricted	Endowment	Restricted	Total funds	Total funds
INCOME						
Income from charitable activities	3	-	-	118,007	118,007	136,446
Income from other trading activities		8,237	-	26,095	34,332	8,341
Interest		-	17	17	34	25
Total income		8,237	17	144,119	152,373	144,812
EXPENDITURE						
Charitable activities	4	(5,861)	(45)	(158,368)	(164,274)	(147,266)
Total expenditure		(5,861)	(45)	(158,368)	(164,274)	(147,266)
Unrealised (loss) gain on investments	10	(1,590)	-	-	(1,590)	1,437
Net income (expenditure)		786	(28)	(14,249)	(13,491)	(1,017)
Other recognised (losses) gains						
Actuarial (losses) gains on defined benefit pension scheme	8	-	-	(80,700)	(80,700)	26,400
Net movement in funds		786	(28)	(94,949)	(94,191)	25,383
Total funds brought forward at 1 October	20	6,032	666	48,857	55,555	30,172
Total funds (deficit) carried forward at 30 September		6,818	638	(46,092)	(38,636)	55,555

The Statement of Financial Activities includes all gains and losses recognised in the year.

All income and expenditure derive from continuing activities.

2018 comparatives by fund are provided through the comparatives given in notes 3 and 20.

The notes on pages 26 to 41 form part of these financial statements.

Genome Research Limited

Balance Sheet as at 30 September 2019

	Note	Total funds 2019 £'000	Total funds 2018 £'000
Fixed assets			
Tangible fixed assets	9	165,945	167,038
Investments	10	4,331	5,921
Total fixed assets		170,276	172,959
Current assets			
Stocks	12	9,472	6,086
Debtors	13	36,905	31,805
Cash at bank and in hand		27,180	1,995
Total current assets		73,557	39,886
Creditors: amounts falling due within one year	14	(54,892)	(18,142)
Net current assets		18,665	21,744
Total assets less current liabilities		188,941	194,703
Creditors: Amounts falling due after one year	15	(20,296)	(21,924)
Provisions	16	(4,281)	(3,324)
Net assets excluding pension liability		164,364	169,455
Defined benefit pension scheme deficit	8	(203,000)	(113,900)
Total net (liabilities) assets		(38,636)	55,555
The Funds of the Charity			
Restricted income funds	20	156,908	162,757
Endowment fund	20	638	666
Pension deficit	8	(203,000)	(113,900)
Total restricted funds		(45,454)	49,523
Unrestricted funds	20	6,818	6,032
Total Charity Funds		(38,636)	55,555

The notes on pages 26 to 41 form part of these financial statements. The financial statements on pages 24 to 41 were approved and authorised for issue by the Board of Directors on 2 December 2019 and were signed on its behalf by:



Lord David Willetts

Chair

Registered company number: 2742969

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 2015' ("the SORP 2015") 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 Charity 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 (Hinxton Hall Limited and Genome Research Trading 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 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 are included in note 7.

The principle 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 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.

Revenue recognition

Income is recognised in line with the SORP requirements for entitlement, probability and measurement. The charity'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 charity 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 revenue is recognised in advance of invoicing, the amounts are recorded as accrued income.

Expenditure

Liabilities are recognised as expenditure as soon as there is a legal or constructive obligation committing the charity 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. The charity has three activities: Sanger Institute, Connecting Science and Enterprise and Innovation.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

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.

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 straight-line 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
<u>Laboratory equipment fixtures and fittings</u>	
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 charity 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 charity 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 charity 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.

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-

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

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 retranslated at the rates ruling at that date. All differences are dealt with in the Statement of Financial Activities.

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

Investments

Unquoted investments are valued at management's best estimate of fair value in line with FRS 102. Changes in fair value are recognised in income and expenditure.

Investments in subsidiaries are measured at cost less impairment.

Defined benefit pension plan

The Charity 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 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 Charity 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 Charity'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 Charity operates a defined contribution plan for certain employees. A defined contribution plan is a pension plan under which the Charity pays fixed contributions. Once the contributions have been paid the Charity 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 Charity in independently administered funds.

Provisions and contingencies

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

The Charity 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 Charity 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.

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2019**

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.

2. Significant accounting judgements and key sources of estimation uncertainty

In application of the Charity'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.

2.2 Significant accounting estimates and assumptions

The Charity 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 Company's defined benefit pension obligation

The Charity 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 pages 13 and 14.

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. A 1% increase in total contract costs would result in a 1% decrease in revenue recognised as at 30 September 2019 and a 0.3% increase in deferred income.

Fair value measurement and valuation processes

Some of the Charity's assets and liabilities are measured at fair value for financial reporting purposes. The Charity considers the appropriate valuation techniques for calculating the best estimate of fair value for reporting purposes. The Charity holds unquoted investments. Where these are made with co-investors, the co-investor valuation is used to determine fair value. Where there is no co-investor, these investments are internally valued, generally using the price of recent investment.

3. TOTAL INCOME

The charitable company has three main activities: Sanger Institute, Connecting Science and Enterprise and Innovation.

Detailed analysis follows:

	2019	2018
	£'000	£'000
Sanger Institute	110,074	128,630
Connecting Science	4,989	5,096
Enterprise and Innovation (Campus)	2,944	2,720
Total income from charitable activities	118,007	136,446
Core grants from Wellcome	89,896	105,970
Other grants from Wellcome	7,163	10,681
Grants from other funders	20,948	19,795
Total grants from charitable activities	118,007	136,446
Income from other trading activities	34,332	8,341
Interest	34	25
Total income	152,373	144,812

Income includes grant funding for both capital and revenue expenditure. Grants from other funders includes £5.7 million government grants (2018: £5.6 million). Other trading income includes income from sequencing services, tenant services and utilities, salary recharges, rental income, licences, the release of deferred income from EBI, and other immaterial income streams, of which £8.2 million (2018: £3.9 million) relates to unrestricted funds. Interest income of £34,000 (2018: £25,000) has been recognised in the year, of which £17,000 (2018: £17,000) relates to the endowment fund.

4a. EXPENDITURE

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

	2019			2018		
	Direct	Support	Total	Direct	Support	Total
	£'000	£'000	£'000	£'000	£'000	£'000
Sanger Institute	139,370	13,861	153,231	125,339	13,491	138,830
Connecting Science	6,316	628	6,944	4,965	535	5,500
Enterprise and Innovation	3,728	371	4,099	2,651	285	2,936
	149,414	14,860	164,274	132,955	14,311	147,266

Support costs have been allocated in proportion to direct costs. Support costs include staff costs of £9.4 million (2018: £8.2 million), depreciation of £0.6 million (2018: £0.6 million), premises costs of £1.7 million (2018: £1.4 million) and other costs of £3.2 million (2018: £4.1 million). Support costs include governance costs.

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

4b. GOVERNANCE COSTS

	2019	2018
	£'000	£'000
External audit costs	76	69
Internal audit costs	120	69
Directors' remuneration and expenses (see note 7)	20	15
	216	153

Governance costs have been allocated in proportion to direct costs.

5. GRANTS AWARDED

Expenditure related to grants awarded is as follows:

	2019	2018
	£'000	£'000
Grants to Institutions		
University of Cambridge	801	192
Colombian Corporation for Agricultural Research	599	29
Harvard University	218	-
University of Ibadan	245	93
University of Ghana	241	-
University of Oxford	41	174
Research Institute for Tropical Medicine, Philippines	-	639
University of California, San Diego	-	292
Grants to other Institutions	467	369
	2,612	1,788

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 £0.2 million (2018: £0.2 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).

6. NET EXPENDITURE BEFORE OTHER RECOGNISED GAINS AND LOSSES

Net expenditure before other recognised gains and losses is stated after charging (crediting):

	2019	2018
	£'000	£'000
Foreign exchange gains	(4,402)	(1,796)
Depreciation	11,952	10,932
Gain on disposal of fixed assets	(102)	(100)
Internal audit	120	69
Fees payable to the company's auditor for the audit of:		
Statutory financial statements	69	62
Pension Fund	7	7

7. EMPLOYEE INFORMATION

Number of employees

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

	2019 Number	2018 Number
Sanger Institute	798	823
Connecting Science	50	43
Enterprise and Innovation	8	7
Administrative	166	144
	1,022	1,017

Analysed by

Sanger Institute

Cancer	122	123
Cellular Genetics	55	54
Human Genetics	64	68
Parasites and Microbes	104	112
Mouse and Zebrafish	-	8
Open Targets	28	34
Science Platforms	277	266
Science Strategy	52	54
Science Support	26	34
IT Platforms	65	65
Translation	5	5
Total	798	823
Connecting Science	50	43
Enterprise and Innovation	8	7
Administrative	166	144
Total Employees	1,022	1,017

PhD Students	51	53
Total Headcount	1,073	1,070

PhD students are not employed by the company but provide a significant contribution to the scientific research. Previously, PhD students were included within the scientific programme which sponsored them. Only those students who receive a stipend directly from the Company are included within the above total.

The Tree of Life programme opened in March 2019. The first employee to work exclusively for this programme commenced in July 2019.

	2019 £'000	2018 £'000
Employment costs		
Wages and salaries	44,886	43,832
Social security costs	4,385	4,295
Short term benefits	859	780
Pension costs	21,347	20,920
	71,477	69,827

Genome Research Limited**Notes to the Financial Statements for Year Ended 30 September 2019**

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:

	2019 Number	2018 Number
£60,000 to £69,999	36	21
£70,000 to £79,999	16	13
£80,000 to £89,999	11	17
£90,000 to £99,999	10	4
£100,000 to £109,999	4	2
£110,000 to £119,999	2	3
£120,000 to £129,999	1	5
£130,000 to £139,999	3	2
£140,000 to £149,999	2	-
£150,000 to £159,999	1	-
£160,000 to £169,999	-	1
£170,000 to £179,999	1	1
£180,000 to £189,999	1	1
£200,000 to £209,999	1	-
£350,000 to £359,999	-	1
£360,000 to £369,999	1	-
£400,000 to £409,999	-	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 £360,454 (2018: £351,399). In the prior year there was an individual whose emoluments exceeded those of the Director due to the inclusion of termination benefits.

Redundancy and termination payments

	2019 £'000	2018 £'000
Redundancy and termination costs	442	589

Directors' remuneration

The Directors of GRL received remuneration totalling £17,750 (2018: £15,000) and expenses of £2,591 (2018: £226) in relation to their duties as Directors. No other benefits or expenses were reimbursed to the directors of the charitable company. All but three 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.

One Director works at an organisation that received funding from the Wellcome Trust, GRL's parent. One Director is a Director of a company with a base on the Wellcome Genome Campus. The company has procedures in place to manage conflicts declared.

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 18 of the Directors' report. The employee benefits paid or payable to key management for employee services is shown below:

	2019	2018
	£'000	£'000
Salaries and other short-term benefits	664	693

8. PENSION SCHEME

The 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 2015 and has been updated to 30 September 2019 by a qualified actuary, independent of the scheme's sponsoring employer. The major assumptions used by the actuary are shown below:

	30 September 2019	30 September 2018	30 September 2017
	per annum	per annum	per annum
Inflation (RPI)	3.15%	3.40%	3.40%
Inflation (CPI)	2.15%	2.40%	2.40%
Salary Growth	3.65%	3.90%	3.90%
Discount Rate	1.85%	2.85%	2.75%
Allowance for revaluation of deferred pensions of RPI of 5% p.a. if less	3.15%	3.40%	3.40%
Allowance for pension in payment increases of RPI or 5% p.a. if less	3.05%	3.25%	3.25%
Allowance for pension in payment increases of CPI or 3% p.a. if less	1.90%	2.00%	2.00%
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 2019	30 September 2018
Male retiring in 2019 (2018)	27.4 years	27.6 years
Female retiring in 2019 (2018)	28.4 years	28.6 years
Male retiring in 2039 (2038)	28.5 years	28.7 years
Female retiring in 2039 (2038)	29.7 years	29.9 years

Announcements by HM Treasury and the UK Statistics Authority on 4 September 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. Consultation on RPI reform is planned for Q1 of 2020 and until the outcome of this consultation is known, there is uncertainty over the nature of RPI-linked pension benefits. At this stage no adjustments have been made for this proposed change within the assumption for RPI used to calculate the Defined Benefit Obligation as at 30 September 2019.

The scheme funding valuation as at 31 December 2015 showed a deficit of £24.8m. The company has agreed with the Trustees that it will aim to eliminate the deficit over a period of 4 years from 31 December 2015 by the payment of two contributions of £3.1m paid in September and December 2016, and three equal contributions of £6.2m payable by 31 December each subsequent year in respect of the deficit.

An approximate annual update as of 31 December 2016 was carried out and showed that the fund was 83% funded with a deficit of £33.9m. Wellcome agreed to increase the annual deficit contribution to £7.8m with effect from 1 January 2017 to clear the deficit over 5 years. An annual update as of 31 December 2017 was carried out and showed the fund was 96% funded with a deficit of £9.8m. As a result the additional contribution was reduced back to £6.2m. £3.1m was paid in September 2019 and Wellcome committed to pay £3.1m in December 2019 if required, pending the finalisation of the scheme funding valuation as at 31 December 2018, which is expected to be approved on 5 December 2019.

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Notes to the Financial Statements for Year Ended 30 September 2019

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

	2019	2018
	£m	£m
Operating charge		
Current service cost	16.0	16.3
Expenses**	0.5	0.3
Net interest cost	3.3	3.7
Losses due to benefit changes	0.2	-
Net charge to Statement of Financial Activities prior to actuarial loss	20.0	20.3
Actuarial loss (gain)	80.7	(26.4)
Total charge to Statement of Financial Activities	100.7	(6.1)

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

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

	2019	2018
	£m	£m
Return on plan assets (excluding amounts included in net interest cost) -gain	6.0	15.2
Experience gains and losses arising on the plan liabilities - loss	(0.7)	(0.5)
Effects of changes in the demographic and financial assumption underlying the present value of the plan liabilities - (loss) gain	(86.0)	11.7
Total amount recognised in other comprehensive income - (loss) gain	(80.7)	26.4

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

	2019	2018
	£m	£m
Fair value of scheme assets at start of year	231.0	197.6
Expected return on scheme assets	6.7	5.6
Actuarial gains	6.0	15.2
Contributions by employer	11.6	15.0
Benefits paid & death in service insurance premiums	(2.4)	(2.4)
Fair value of scheme assets at end of year	252.9	231.0

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 15.3%
Rate of inflation	Increase/decrease of 0.5% p.a	Increase/decrease by 14.5%
Rate of salary growth	Increase/decrease of 0.5% p.a	Increase/decrease by 3.5%
Probability of death in any year after retirement	Increase/decrease of 10%	Increase/decrease by 2.3%
Long-term rate of mortality improvement	Increase/decrease of 0.25% p.a	Increase/decrease by 1.3%

Contributions payable to the defined benefit scheme during the year amounted to £11.6 million (2018: £15.0 million). In addition £0.5 million (2018: £0.3 million) was paid in respect of scheme administration expenses and insurance premiums for death in service benefits. The actual return on the plan assets over the period ended 30 September 2019 was £12.7m (2018: £20.8m).

The best estimate of contributions to be paid by the employer to the scheme for the year beginning after 30 September 2019 is £12.7 million (2018: £13.6 million).

Scheme Assets

	30 September 2019	30 September 2018	30 September 2017
Equity	252.2	230.4	197.0
Other (Property, Cash, etc.)	0.7	0.6	0.6
Total Assets	252.9	231.0	197.6

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

	2019 £m	2018 £m
Scheme liabilities at start of year	344.9	332.6
Current service cost	16.0	16.3
Expenses	0.5	0.3
Interest cost	10.0	9.3
Actuarial losses (gains)	86.7	(11.2)
Benefits paid & death in service insurance premiums	(2.4)	(2.4)
Losses due to benefit changes	0.2	-
Scheme liabilities at end of year	455.9	344.9

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

	2019 £m	2018 £m	2017 £m	2016 £m	2015 £m
Fair value of assets	252.9	231.0	197.6	152.4	103.3
Present value of scheme liabilities	(455.9)	(344.9)	(332.6)	(355.4)	(205.5)
Deficit in scheme	(203.0)	(113.9)	(135.0)	(203.0)	(102.2)
Return on scheme assets	6.0	15.2	29.4	(9.0)	(1.9)
Experience (losses)/gains on scheme liabilities	(0.7)	(0.5)	0.6	0.5	3.0
Effects of changes in the demographic and financial assumptions underlying the present value of the scheme liabilities	(86.0)	11.7	48.7	(6.9)	(25.0)

Defined contribution scheme

The charitable company provides a defined contribution Group Personal Pension Plan.

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

	2019 £'000	2018 £'000
Current period contributions	1,952	1,368

Contributions paid to the defined contribution scheme during the year amounted to £2.0 million (2018: £1.4 million).

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

9. TANGIBLE FIXED ASSETS

	Assets in the course of construction £'000	Short leasehold buildings £'000	Laboratory equipment, fixtures and fittings £'000	Total £'000
Cost				
As at 1 October 2018	1,058	194,096	127,397	322,551
Additions	752	222	10,009	10,983
Transfers	(971)	-	971	-
Disposals	-	-	(5,082)	(5,082)
As at 30 September 2019	839	194,318	133,295	328,452
Accumulated depreciation				
As at 1 October 2018	-	44,322	111,191	155,513
Charge for the year	-	4,125	7,827	11,952
Disposals	-	-	(4,958)	(4,958)
As at 30 September 2019	-	48,447	114,060	162,507
Net book value at 30 September 2019	839	145,871	19,235	165,945
Net book value at 30 September 2018	1,058	149,774	16,206	167,038

10. INVESTMENTS

	2019 £'000	2018 £'000
Unquoted programme related investments		
At 1 October	5,921	4,484
Unrealised (losses) gains	(1,590)	1,437
At 30 September	4,331	5,921

Unquoted programme related investments represent the fair value of the Institute's holding of ordinary share capital of Kymab Limited (1%), VHSquared Limited (5%), Microbotica Ltd (8%) and Congenica Ltd (3%).

Investments in subsidiaries as at 30 September 2019 and 2018 were held at £1 (see note 19).

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 £3.3 million (2018: £3.7 million). This amount is charged in the accounts with its related expenditure.

The company has previously recorded as income claims made for Research and Development Expenditure Credits for relevant expenditure incurred in the years 30 September 2013, 2014 and 2015. The legislation was amended with effect from 1 August 2015 preventing further claims.

HM Revenue and Customs has paid the claimed amounts for 2013 and 2014 (£2,319,028 and £4,875,474 respectively); however, HMRC has raised assessments to protect its position in relation to the 2013 and 2014 claims, which have been formally appealed. HMRC has now accepted that the company is carrying on a trade and as such is eligible for the relief on qualifying expenditure, however HMRC has requested additional information to support the value of the claim of £4,162,271 for the year ended 30 September 2015. This information has been submitted and whilst no opinion has yet been given by HMRC, management is confident that we have complied with the rules which were applicable at the time and have provided sufficient support to demonstrate this.

12. STOCKS & WORK IN PROGRESS

	2019	2018
	£'000	£'000
Raw materials and consumables	9,472	6,086

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

13. DEBTORS

	2019	2018
	£'000	£'000
Trade debtors	2,844	1,781
Amounts owed by parent and group undertakings	14,820	12,722
Prepayments	7,593	5,289
Accrued income	7,370	7,161
Other debtors	4,278	4,852
	36,905	31,805

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. Other debtors in 2019 includes £4.2 million (2018: £4.2 million) relating to RDEC claim referred to in note 11.

14. CREDITORS: amounts falling due within one year

	2019	2018
	£'000	£'000
Trade creditors	14,685	5,131
Taxation and social security	2,703	1,170
Other creditors	1,108	1,038
Payroll creditors	172	107
Accruals for grants payable	139	353
Other accruals	3,408	3,017
Deferred income	32,677	7,326
	54,892	18,142

15. CREDITORS: amounts falling due after one year

	2019	2018
	£'000	£'000
Amounts falling due after one year:		
Between one and five years - deferred lease premium	2,130	2,130
Between one and five years - employee share of investment gain	2,598	3,694
More than five years - deferred lease premium	15,568	16,100
	20,296	21,924

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

Deferred income	Lease premium	Grant income	Trading contracts	2019 £'000	2018 £'000
At 1 October	18,764	5,739	1,053	25,556	32,257
Received during the year	-	13,069	21,528	34,597	9,713
Released to income during for the year	(534)	(8,191)	(1,053)	(9,778)	(16,414)
At 30 September	18,230	10,617	21,528	50,375	25,556

The deferred lease premium of £18.2 million (2018: £18.8 million), including a short term element of £0.5 million (2018: £0.5 million), relates to a lease premium received from EBI (European Bioinformatics Institute). The deferred grant income of £10.6 million (2018: £5.7 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, of which £20.3 million (2018: £nil) relates to the UK Biobank consortium contract to sequence whole genomes.

16. PROVISIONS

	2019 £'000	2018 £'000
Amounts owed in respect of transferring faculty members	2,248	3,324
Amounts owed in respect of the closure of the Research Support Facility	2,033	-
	4,281	3,324

	Faculty	RSF	2019 £'000	2018 £'000
At 1 October	3,324	-	3,324	-
Charge during the year	606	2,033	2,639	3,324
Utilised during the year	(1,682)	-	(1,682)	-
At 30 September	2,248	2,033	4,281	3,324

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 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.

17. CAPITAL COMMITMENTS

As at 30 September 2019 there were £2.7m commitments contracted but not accrued relating to the West Pavilion redevelopment and Campus frost coils (2018: £nil).

18. 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 principle 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 42.

19. RELATED PARTY TRANSACTIONS

The company is wholly-owned by the Wellcome Trust and has applied the exemption in paragraph 33.1A of FRS 102 "Related

Genome Research Limited
Notes to the Financial Statements for Year Ended 30 September 2019

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 2019 are as follows:

Name of subsidiary and company number	Proportion of ownership interest	Proportion of voting power held	Principal Activity
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
GRL Construction Limited (09280062)	100%	100%	Dormant

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

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 2019 of £3.7m (2018: £1.7m).

20. MOVEMENT IN FUNDS

	1 October					30 September
	2018	Incoming	Outgoing	Losses	Transfers	2019
	£'000	£'000	£'000	£'000	£'000	£'000
Building development	130,909	346	(4,125)	-	-	127,130
Capital equipment	16,392	6,000	(7,687)	-	-	14,705
Research fund	15,456	137,773	(138,156)	-	-	15,073
Restricted income funds	162,757	144,119	(149,968)	-	-	156,908
Endowment fund	666	17	(45)	-	-	638
Pension deficit	(113,900)	-	(8,400)	(80,700)	-	(203,000)
Total Restricted Funds	49,523	144,136	(158,413)	(80,700)	-	(45,454)
Investment fund	2,229	-	1,094	(1,590)	-	1,733
Unrestricted fund	3,803	8,237	(6,955)	-	-	5,085
Total Unrestricted funds	6,032	8,237	(5,861)	(1,590)	-	6,818
Total Charity Funds	55,555	152,373	(164,274)	(82,290)	-	(38,636)

Genome Research Limited

Notes to the Financial Statements for Year Ended 30 September 2019

	1 October		30 September			
	2017	Incoming	Outgoing	Gains	Transfers	2018
	£'000	£'000	£'000	£'000	£'000	£'000
Building development	130,609	4,311	(4,011)	-	-	130,909
Capital equipment	13,223	9,989	(6,820)	-	-	16,392
Research fund	19,042	126,645	(129,244)	-	(987)	15,456
Investment fund	1,659	-	-	-	(1,659)	-
Restricted income funds	164,533	140,945	(140,075)	-	(2,646)	162,757
Endowment fund	639	17	(75)	-	85	666
Pension deficit	(135,000)	-	(5,300)	26,400	-	(113,900)
Total Restricted Funds	30,172	140,962	(145,450)	26,400	(2,561)	49,523
Investment fund	-	-	(867)	1,437	1,659	2,229
Unrestricted fund	-	3,850	(949)	-	902	3,803
Total Unrestricted funds	-	3,850	(1,816)	1,437	2,561	6,032
Total Charity Funds	30,172	144,812	(147,266)	27,837	-	55,555

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 Company during the year. The investment fund represents the increase in fair value of the 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 transfers in 2018 represents funds which were previously returned to a restricted activity which are now available for use at the discretion of the Directors, including gains arising on investments, and expenditure from the research fund being met by the endowment fund relating to previous years.

The assets and liabilities of each category of funds are as follows as of 30 September 2019:

	Restricted	Endowment	Pension	Unrestricted	Total
	£'000	£'000	£'000	£'000	£'000
Fixed assets	165,945	-	-	-	165,945
Investments	-	-	-	4,331	4,331
Current assets	46,885	638	-	26,034	73,557
Current liabilities	(33,943)	-	-	(20,949)	(54,892)
Long term creditors	(17,698)	-	-	(2,598)	(20,296)
Provisions	(4,281)	-	-	-	(4,281)
Pensions	-	-	(203,000)	-	(203,000)
	156,908	638	(203,000)	6,818	(38,636)

The assets and liabilities of each category of funds are as follows as of 30 September 2018:

	Restricted	Endowment	Pension	Unrestricted	Total
	£'000	£'000	£'000	£'000	£'000
Fixed assets	167,038	-	-	-	167,038
Investments	-	-	-	5,921	5,921
Current assets	34,595	666	-	4,625	39,886
Current liabilities	(17,322)	-	-	(820)	(18,142)
Long term creditors	(18,230)	-	-	(3,694)	(21,924)
Provisions	(3,324)	-	-	-	(3,324)
Pensions	-	-	(113,900)	-	(113,900)
	162,757	666	(113,900)	6,032	55,555

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), as trustee of the Wellcome Trust (Charity registration number 210183). 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 Company who were in office during the year and up to the date of signing the financial statements were:

Lord David Willetts (Chair)
Professor Dame Kay Davies
Professor Rolf-Dieter Heuer
Sir James Smith (Wellcome Trust)
Mr Paul Schreier (Wellcome Trust) (Appointed 29 October 2019)
Dr Nicole Mather (Appointed 29 October 2019)
Mrs Kathy Poole (Wellcome Trust) (Appointed 28 May 2019, resigned 29 October 2019)
Mr Tim Livett (Wellcome Trust) (Resigned 25 January 2019)

Company Secretary

Nadia Meliti

Registered Office

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Company No: 2742969