LifeArc

Unlocking the potential of life sciences

Annual Report and Audited Accounts
For the year ended 31 December 2021

lifearc.org

We make life science life changing

We transform promising life science ideas into medical breakthroughs that change patients' lives.

Danny was diagnosed with Hunter syndrome when he was three years old. He has the most severe form of the disease, which has no cure and limited treatment options.

In partnership with children's charity Action Medical Research, we are funding a lab project at the University of Manchester to find out if an innovative stem cell gene therapy can help children like Danny.

For more information, visit AMR's website **action.org.uk**

→ **Story of our year**
pages 16-19

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Highlights

Operational highlights

In 2021 LifeArc launched its long-term strategy, built around three strategic pillars which are discussed on page 12. Here are some other highlights of our year:

18	**Early-stage companies enabled** to advance innovative research through Early Ventures funding, KQ Labs and Novartis Biome collaborations
3	**COVID projects supported by LifeArc** have reported results with the potential to change patient care
2	**Joint research funding applications** by Motor Neurone Disease community, facilitated by LifeArc
150	**Sector experts and stakeholders** participated in a workshop to address the issues of drug repurposing

Financial highlights

LifeArc's expenditure exceeded its income, but gains on investments are laying the foundations for long-term funding of innovative life science.

£56.5m	**Total expenditure** on charitable activities: an increase of 14% on 2020
£17.9m	**Income** from charitable activities and investments

In 2021 we shared our 2030 strategy

We have set out our strategy for long-term impact, spearheaded by three strategic pillars and supported by £1.3bn in funding by 2030.

Dr John Stageman, CBE
Chair – LifeArc

£1.3bn

To support life sciences innovation between now and 2030

The past year is a testament to the strength and resilience of our organisation and our people. We have adapted to the ongoing challenges of the COVID-19 pandemic while continuing to progress and support important translational research that has the potential to benefit patients. At the same time, we launched our 10-year strategy and brought through changes to implement our ambitious plans successfully.

Evolving our strategy

Our new strategic direction outlines how we will make life science life changing. It includes a target of committed spend of £1.3bn by 2030 so that patient-focused innovations from universities, medical research institutes and other organisations can progress and flourish. The strategy, which is outlined on page 12, sets out three strategic pillars that guide how we will achieve our ambition. These pillars are:

Impact with Partners

We work with partners in other medical research organisations to advance the innovative science and ideas being explored by academia, charities and patient groups. We will build on our legacy of creating successful partnerships to help ensure more innovations benefit patients and society, faster.

Translational Challenges

Our Translational Challenges will unite our collective strengths and resources with the expertise and funding of other life sciences partners to solve urgent, significant healthcare problems.

Early Ventures

By bridging the gap between academic innovation and commercial funding, our Early Ventures approach will provide a much-needed source of investment for young companies developing new products and technologies with the potential to transform patients' lives.

These strategic pillars reflect not only our determination to put patients at the core of what we do, but also our belief in the collective power of life science innovation.

Through the new collaborations we will be forming, we will unlock the vast potential of the research community to tackle complex healthcare challenges we face.

New expertise to guide our strategy

While the principal story of the year has been the launch of our long-term strategy, it has also seen changes in the Board of Trustees.

This year, we have welcomed three new Trustees: Dr Ian Gilham, Ian Nicholson and Susan Wallcraft. They bring vital skills and experience to help us implement our new strategy and are already helping us to shape the exciting future for our charity.

Long-serving Trustees Peter Keen, Dr Sally Burtles and Dr Paul Mussenden reached the end of their full terms and stepped down from the Board during 2021. I thank Peter and Sally most sincerely for their exceptional commitment and considerable expertise devoted to LifeArc over the past eight years, which have been invaluable. My deep gratitude also to Paul, who as my deputy chair and chair of the Audit Committee, has been my confidant and critical friend when times have been challenging. All three can be very proud of how far LifeArc has changed and progressed over the last eight years and of their own personal contribution to this journey.

During 2021, we also convened our Strategic Advisory Council for the first time. When we moved to a foundation model in 2020, the Board recognised that it would benefit from an advisory body to offer strategic, societal and patient insight. The council, which had its first meeting in 2021, is made up of highly knowledgeable, experienced and influential leaders in the life sciences world and beyond. I highly value the advice, challenge and support this august body is already providing to the LifeArc Board, guiding the charity on how we can maximise our ability to transform medical innovation for patients. I would like to thank them too for committing their time to us.

We are ready to deliver our vision for the future

This is my last report as chair of LifeArc as I will be retiring from the Board at the end of March. I am pleased to announce that the Board has approved the appointment of Dr Ian Gilham as our new chair, to take office from 4 April 2022. I would like to express my sincere gratitude to all employees of LifeArc and to my fellow Trustees, for the invaluable support you have given me during my term of office, and for the outstanding contribution you have made to LifeArc throughout times of great change and significant challenge.

I would like to wish Ian every success in leading LifeArc through the next phase of its journey. We have reached a critical juncture with so much potential and opportunity. Our next phase must be all about successful implementation and delivery.

Dr John Stageman CBE
Chair – LifeArc
22 March 2022

> "In a further year of challenge, LifeArc has started to implement its 10-year strategy to enhance human health by supporting and accelerating life science innovation."

We unlock the life-changing potential of science

We advance promising life science ideas into medical treatments that can change patients' lives.

Who we are

LifeArc accelerates healthcare innovation by transforming promising life science ideas into life-changing medical breakthroughs for patients.

As a self-funded charity we are not dependent on external funding for our projects. However we have an excellent tradition of partnering with others involved in early-stage translation – advancing lab-based scientific discoveries to a point at which they can be developed into the next generation of diagnostics, treatments and cures.

We have an office in London and scientific research facilities in Stevenage and Edinburgh. We also have a specialist science team working at the Francis Crick Institute in London. Altogether over 200 people work for LifeArc.

219

employees at the end of 2021, with a range of expertise including R&D, technology transfer, patent protection, diagnostics, business development and life sciences investment

4

sites in the UK: including three state-of-the-art laboratories and a dedicated lab space in the Crick Institute

£1.3bn

committed by 2030 to support life sciences innovation

What we do

We specialise in translation. This is the process of advancing scientific ideas from their origins in the lab along the way to become the next generation of interventions that benefit patients. These interventions can include diagnostics and devices for monitoring or supporting patients, through to therapies that improve their lives.

We provide translational science, advice and funding to advance basic scientific discoveries. Spotting opportunities and knowing what to do with them requires specialised knowledge. Too few ideas make it out of the lab.

We have the knowledge and resources to support this area, acting as an independent partner for innovative researchers to reduce risk and add value by providing and sharing skills in translation and entrepreneurship.

LifeArc's translational role begins by seeking out innovation, primarily in universities, charities and start-ups, with significant potential to benefit patients. We then act as a trusted partner to help develop this science to a point where there is a clinical and commercial pathway for others to invest the time and money to take forward. We do this by providing a unique mix of advice, funding and conducting the research ourselves:

Translational advice

Our expert teams provide support on a wide range of translational issues, including managing intellectual property, evaluating the translational potential of research portfolios, advising on funding and identifying routes to market.

Translational science

We don't just help other scientists harness the power of their discoveries to transform lives, we also carry out our own research.

Our state-of-the-art laboratories in Stevenage are dedicated to drug discovery, while our scientists in Edinburgh are developing diagnostics.

Translational funding

Our **Early Ventures funding** provides a much-needed source of investment for young start-ups, intended to generate a financial return to support long-term patient impact.

The **Philanthropic Fund** provides grants and advice to academic researchers working on new treatments and diagnostics for rare diseases.

Lisa, (above right, with her mother) lives with Aplastic Anaemia: "Without research into disease management and cure, I wouldn't be here today".

LifeArc contributed £1.15m with the Aplastic Anaemia Trust to fund research by King's College London and King's College Hospital into s novel type of personalised cellular therapy. This research could give new hope to people living with a severe, life-limiting form of this condition.

How we are funded

As a self-funding charity, we don't rely on fundraising or external grants. We fund our work ourselves primarily through our investment portfolio.

At its core is a one-off payment of around £1bn we received from monetising a portion of our rights to royalties from the cancer drug *Keytruda* in 2019.

Our independent, charitable status gives us greater freedom to invest in areas where others are reluctant because of the high level of risk. This means we can channel resources into areas of high patient need where others may not be providing support.

Our ambition and strategic direction

At LifeArc, our ambition is to make life science life changing. We will achieve this through the three pillars of our strategy.

→ **Our strategic direction is described in more detail on** page 12

Our impact

You can see our impact in new companies and devices and medicines used to treat patients with a wide range of diseases, including multiple sclerosis, rheumatoid arthritis, ulcerative colitis, cancer and, most recently, COVID-19.

We also create opportunities for innovation by generating and disseminating science and health knowledge and by nurturing the research talent of tomorrow.

We develop expertise and skills in our own people through accredited training and project experience and help others through our fellowships and industrial placement schemes.

1 **Research translation**

transforming promising research into potential treatments for patients

2 **Stimulating new research**

leveraging partnerships and funding to support innovation in key areas of patient need

3 **Knowledge generation**

generating new science and health knowledge to stimulate future innovation

4 **Developing future scientists**

supporting a future generation of innovators by growing their capacity to carry out and enable future research

→ **How we measure our impact** pages 20-22

Life science sector review: the trends informing our strategy

As the life sciences sector advances, we follow its development closely and identify the areas where we see the greatest opportunities to achieve our ambition.

Introduction

In the past two years, life science research has been front-page news. COVID-19 has highlighted the vital importance of the sector to worldwide health, as well as to the economy and society.

This is as true of the UK as it is anywhere else. From the development of the Oxford-AstraZeneca vaccine to the Recovery trial, which identified one of the first treatments for COVID-19, the contribution of UK life sciences to the pandemic response has helped save millions of lives around the world.

The pandemic – and the way organisations have responded – has also been a catalyst for new ways of working. Regulatory processes have been streamlined. Silos between scientists working in different fields have been broken down and new types of collaborations have sprung up between industry, academia and regulators.

The speed with which the life sciences community responded to the challenge illustrates the power of innovation and collaboration in life sciences and provides a blueprint for future research. Applied to other health issues, it offers a bright future for patients, their families and society. It also underlines the essential role of medical research translation in making that future a reality.

UK life sciences – investing for our future

The life sciences sector is one of the most valuable and strategically important segments of the UK economy. It employs 268,000 people across 6,330 businesses at 7,180 sites, generating a turnover of £88.9bn in 2020.[1]

Employment in the sector has risen by 13% in the last decade. And while financing still lags behind the US, the UK life sciences and biotech sector secured a record £4.5bn in public and private financing in 2021 – £1.7bn more than in 2020.[2]

Despite this, there is more that can be done to stimulate early innovation. Investing more direct capital at early-stage research (where an academic has ideas and a discovery in basic science but needs funding to achieve scientific and technical milestones) will help stimulate this. This early investment to support emerging opportunities should also help retain entrepreneurial companies and create employment and other economic and social benefits for the UK.

The UK Government has pledged to increase public R&D investment to £20bn by 2024-25.[3] The commitment, made in the 2021 Spending Review, represents a 33% increase on the current research budget of £15bn a year. However UK investment in research and development remains short of the government's medium-term target of 2.4% of GDP, and trails those of France, Germany and the USA.

£88.9bn
turnover of the life sciences sector in 2020

51%
of non-commercial medical research funded by charities

£4.5bn
public and private financing secured by the UK life sciences and biotech sector in 2021

An ongoing cause of concern is the lack of resolution around the UK's membership of the EU's £80bn research programme, Horizon Europe. UK-based researchers received 12.1% of the budget of its predecessor, Horizon 2020 – the second highest amount in the EU.[4] And while the UK Government has reiterated its commitment to associate with Horizon Europe, the lack of a clear timeline for finalising this situation threatens current and future collaborations between UK and European scientists.[5]

The need for government investment has become more acute since the onset of COVID-19.

The Association of Medical Research Charities (AMRC) estimated that medical research charities lost 38% of their fundraising income between March and May 2020 and predicted a 27% loss in the 12 months from September 2020 to August 2021. As a result AMRC members predicted a shortfall in combined research spending of between £252m and £368m for 2020-21 alone. The British Heart Foundation was forced to halve its research budget for 2021, while Cancer Research UK cut £44m from its research budget.[6]

The lack of investment does not just impact current projects but means that the longer-term pipeline of innovation is compromised, as early-stage research is not progressed either. It also raises the risk of losing a future generation of scientists. A 2020 AMRC survey of more than 500 charity-funded early career researchers in the UK found that four in ten were considering leaving research due to funding concerns.

Innovation is central to the value of the UK life sciences sector; but innovation needs investment to thrive. While the charitable sector is looking to the UK Government to help address the shortfall, private sector funding remains essential as well. An organisation like LifeArc, with its proven capacity to co-fund innovation, has a key role to play.

The '4 Ds' continue to transform R&D

Many new promising areas of innovation are coming from developments in the '4 Ds' – diagnostics, drugs, devices and digital solutions, all underpinned by data. Taken together these will transform the way diseases are identified, treated and even prevented.

Drugs and new platforms

New approaches to drug development are opening up exciting options to treat and prevent disease. One of those is in cell and gene therapy, for example the replacement of missing cells or genes with healthy ones to restore normal function, or the use of a gene or cell with a new effect to address a particular condition (for instance CAR-T therapy).

The promise of these therapies is already starting to be realised. A number of therapies have passed the proof of concept or clinical stage and are now marketed, including antisense DNA, antibody drug conjugates, RNA aptamers, RNAi and CAR-T cells. However the clinical pipeline is limited, compared with traditional therapies, as manufacture is complex and expensive capacity is limited, while reimbursement of these therapies is still a challenge.

The pandemic has unlocked the power of RNA vaccines in particular. The platform, which allows for rapid mass-production, forms the basis of the Pfizer-BioNTech and Moderna COVID-19 vaccines and could form the foundations of a new generation of vaccines against conditions as diverse as malaria, flu and HIV.

Diagnostics and devices

Accurate and early diagnosis is central to survival in conditions such as cancer, cardiovascular disease and stroke. It provides time for earlier interventions and ways to monitor the efficacy of treatments.

In 2020, the Deloitte Centre for Healthcare Solutions estimated that 75% of clinical decisions are based on a diagnostic test.[7] The demand for lateral flow and PCR tests for COVID has thrust diagnostics into the spotlight since then and has led to an unprecedented volume of new diagnostics hitting the market.

The growth in infrastructure and in public acceptance of at-home testing means that the diagnostics sector is ripe for further expansion.

Meanwhile, people are increasingly using wearable technology to inform their own healthcare decisions and to provide information to clinicians, enabling more personalised treatment.

Big data and digital transformation

Technology, from telemedicine to artificial intelligence (AI), continues to be a major disruptor in the sector.

From identifying new viral variants at pace, to the search for genetic variations that affect COVID risk, the pandemic has demonstrated the very real value of big data in healthcare. Examples of the potential of big data to drive innovation include the GenOMICC study, an international collaboration led by Genomics England, which has revealed fresh details about some of the mechanisms behind the severe form of the disease.

The GenOMICC study demonstrates the huge potential of genomics to understand the genetic variations that makes some people susceptible to particular conditions; this in turn opens up the potential to develop new treatments or modify existing treatment regimes.

Artificial Intelligence (AI) is another area where innovation could significantly benefit medical research, as demonstrated by Google's Deep Mind project. In 2021, as part of the CASP13 protein folding competition, DeepMind AI system AlphaFold successfully predicted the 3D structure of a protein from its genetic sequence.

Protein folding is a complex problem, consisting of three closely related puzzles: the folding code, the folding mechanism and the ability to predict the native structure of a protein from its amino acid sequence.

As DeepMind founder and CEO Demis Hassabis explained: "Proteins are essential to life. Predicting their 3D structure is a major unsolved challenge in biology and could impact disease understanding and drug discovery." Unlocking these puzzles could help us understand the disease mechanisms of some of today's most intractable diseases, such as Alzheimer's disease and Amyotrophic Lateral Sclerosis (ALS).

There are still limitations in the sector's ability to harness the power of big data, such as gaps in datasets and high competition for talent available to analyse these. These gaps require investment and collaboration between industry, academia, patient charities and the NHS to address. The opportunity to explore large datasets such as the NHS medical records will also require significant attention to address privacy and confidence concerns that have been raised by others.

UK Government's Life Sciences Vision

The UK Government's UK Life Sciences Vision, which was published in July 2021, aims to build on the successes of the 2017 Life Sciences Industrial Strategy, as well as the new ways of working that were established during COVID, to make the UK a life sciences superpower.

The 10-year Vision outlines seven critical healthcare missions that government, industry, the NHS, academia and medical research charities will work together on at speed to solve – from cancer treatment to tackling dementia – areas in which LifeArc is active.

These missions will focus on preventing, diagnosing, monitoring and treating disease early, using innovative clinical trials to develop breakthrough products and treatments quickly to help save lives, and accelerating the development and adoption of new drugs, diagnostics, medical technology and digital tools.

As the Vision states, the race is on to determine which countries will lead the sector over the next decade. The prize, in terms of both economic growth and human health, is large and, as the work of the Oxford COVID-19 vaccine team and the GenOMICC consortium illustrates, the UK can more than hold its own on the world stage.

Scientists across the UK have the imagination, determination and knowledge to transform healthcare but too few of their ideas even make it out of the university lab. With the right support, more of these ideas could be turned into diagnostics, drugs and devices that change patients' lives.

However, to address the challenges laid out in the Vision, and achieve long-term success, it is crucial that many of the key players in the UK life sciences sector begin to work in new ways.

We at LifeArc see ourselves as playing a key role in that solution. This is why we have challenged ourselves and our partners, existing and new, to embrace change, to work together in new ways and to find new solutions to intractable problems. In this way, addressing the challenges and opportunities that our sector presents, we believe we can make life science life changing.

1 UK Government, Bioscience and Health Technology Sector statistics 2020.
2 BIA Finance Report 2021.
3 UK Government, Life Sciences Vision, 2021,
4 EU Q&A on UK participation in Horizon programme, 2021 (figures).
5 Submission of Guild of European research-intensive Universities to the president of the EU Council, November 2021 (reference to concerns re timeline).
6 AMRC Spending Review submission, September 2021.
7 Global Sciences Outlook, 2020.

GenOMICC study reveals gene faults underpinning severe COVID-19

LifeArc has allocated £27m to COVID research, including £5m committed to the GenOMICC study – the world's largest study into the genetics of severe COVID-19.

COVID-19 continues to cause thousands of deaths and put healthcare systems under strain worldwide. One of the biggest mysteries of the virus is why people respond so differently to infection. Although most people experience mild or no symptoms, some develop severe disease that needs hospital treatment. While environmental factors – such as age, sex and pre-existing health conditions – play their part, genetics may also hold the key.

In May 2020, researchers from the GenOMICC consortium launched the GenOMICC study in partnership with Genomics England. It aimed to identify key genetic variants involved in determining COVID-19 severity. This would uncover vital new information to identify people most at risk of developing life-threatening symptoms and investigate existing drugs with the potential to treat them.

£5m
provided by LifeArc
to increase understanding of the role of genetic risk factors in patient response to COVID-19

In March 2021, the team reported their findings in the journal Nature Genetics. By studying the genomes of over 57,000 people, they had discovered 16 new gene changes linked with the risk of developing severe COVID-19, including some related to blood clotting, immune response and inflammation. They also confirmed some of their earlier discoveries regarding seven other gene variations.

Dr Dave Powell, LifeArc's Chief Scientific Officer said: "Studies like this reveal important genetic factors that drive severe disease and could highlight potential future treatment options for COVID-19, either new drugs or existing drugs that can be repurposed. We are proud to support the programme by helping the team decide which drugs to investigate and take forward. We'll watch with interest as these discoveries advance the therapeutic pipeline towards the clinic, where they could ultimately help patients."

Dr Kenneth Baillie, who led the study at the University of Edinburgh, said: "We now understand the mechanisms of COVID-19 better than the other syndromes we treat in intensive care in normal times – sepsis, flu, and other forms of critical illness. COVID-19 is showing us the way to tackle those problems in the future."

> This support from LifeArc is a great boost for the GenOMICC consortium. Our work on COVID-19 has already shown the potential of genetics to guide us about which drugs to test next. LifeArc's focus on translating scientific findings into real world impact fits perfectly with this.
>
> **Dr Kenneth Baillie**
> Chief Investigator of the GenoMICC study

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Our strategy

Our new strategic direction outlines how we will make life science life changing. It includes a target of committed spend of £1.3bn by 2030.

Our strategy is available on our website as an online booklet

→ Read more
lifearc.org/about/our-strategy

LifeArc's 2030 strategy:
Our strategy is built on three strategic pillars: here is how we see those pillars evolving:

Impact with Partners

Forming partnerships with others to realise the potential of their innovations

As the early-stage translation experts we are uniquely placed to accelerate innovation as a trusted partner to academia, industry, charities and patient groups.

Our mission
Our ambition is to create meaningful shift in how life science innovators access technology transfer expertise, translational pathways and funding.

Our priorities
- We will intensify our understanding of the needs of patients with rare and untreated diseases
- We will identify and scope out areas where we can have the greatest impact for patient benefit
- We aim to have a network of partnerships and funding initiatives in place by 2030

£200m
Spending by 2030
to support our partners in new ways of working

Translational Challenges

Mobilising around Translational Challenges to solve urgent healthcare problems

We unite strengths across LifeArc and the life sciences sector to accelerate new research to address patient needs.

Our mission
Working with others to connect and unlock scientific innovations that can solve complex healthcare problems.

Our priorities
- Long-term programmes around specific patient interventions that can be developed over the short, medium or long term.
- Collaborative programmes with multiple partners
- Shaped by what patients tell us they need
- Look at the entire pathway, and consider range of interventions – from diagnostics to devices, drugs and digital.
- Expect to initiate three challenges by 2023

6
Translational Challenges
planned to be operational by the end of 2030

Early Ventures

Targeting investments in Early Ventures

We bridge the gap between academic innovation and venture funding.

Our mission
We will invest in early life science ventures, providing a much needed source of investment for young companies developing products and technologies with the potential to transform patients' lives.

Our priorities
- Funding to help companies carry out early-stage translational research into areas of high patient need to deliver:
  - Benefits for patients
  - Financial return to LifeArc
- Investing early to bridge the gap between academic innovation and mainstream venture funding, helping companies to achieve progress and proof of concept.
- Focusing on innovative new technologies, modalities, and research, therapeutics, digital, data driven solutions, devices and diagnostics.

10-15
New Early Venture investments
by the end of 2030

A year of transformation

As a charity, we are here to improve the lives of patients. This year has seen us make great progress in advancing medical research and in setting out how we can work with others to transform the way diseases are diagnosed, treated and potentially prevented.

Dr Melanie Lee, CBE
CEO – LifeArc

£8m
Invested by LifeArc in gene therapy innovation hubs

£27m
Made available to combat COVID-19

£1.3bn
to underpin long-term impact to support life sciences innovation

In 2021 we shared our vision for the future with the publication of our long-term strategy (opposite).

We have also continued to play a key role in unlocking that potential. Through our work, we have contributed to new understandings of SARS-CoV-2, motor neurone disease (MND) and Alzheimer's, as well as helping to accelerate the promise of gene therapy research.

We have managed to achieve this in the most testing of circumstances, while supporting each other through the impact of the pandemic on our personal and working lives. So I would like to begin my review of the year by thanking LifeArc colleagues for their unremitting focus, support and adaptability during such a challenging year. The talent, dedication and determination of our people made possible our achievements in 2021. It will also be vital as we work together to realise our 2030 ambition.

A year of achievement

For all its disruption, the pandemic has demonstrated the value that the life sector creates, and how when we work together, we can achieve so much more. It is because of the close collaboration between academia, medical research businesses, charities, the NHS and government that there are vaccines and medicines in place to tackle COVID-19.

One of the keys to realising this potential has been the role of medical translation – the process of advancing scientific ideas from their origins in the lab along the way to become the next generation of interventions that benefit patients.

Many of LifeArc's most significant achievements in 2021 were achieved by harnessing the power of partnership to make life science life changing. Our review of the year on pages 16 to 19 illustrates our achievements. But there are some noteworthy highlights.

One of these is the role we are playing in unlocking the potential of advanced therapeutics. The network of Innovation Hubs in Gene Therapies, established through a unique partnership, is designed to enable academic-led clinical trials of novel therapies. These hubs will provide the clinical grade materials, facilities and expertise to accelerate the development of new genetic treatments. They, in their turn, have the potential to transform the care of patients, including those with rare and life-threatening genetic diseases.

Secondly we have begun working closely with patient groups to understand their needs and how this should shape our work. We are determined to make a difference for patients, who are increasingly well informed and involved in their treatments. We have worked with the Cystic Fibrosis Trust and other patient groups to explore the life-limiting impact of repeated lung infections, known as exacerbations, and understand how to improve the quality of patients' lives (for more on this see page 18). This is helping to direct our work in this area.

Through our relationship with the MND Association, My Name'5 Doddie and MND Scotland, we have started two joint initiatives to accelerate research into this life-shortening illness. Patients like David (opposite) tell us that they need this kind of collaborative approach to bring meaningful treatments closer.

We have also harnessed the power of collaboration to address barriers to progress, as we identified in our workshop for charities on drug repurposing (see page 16). This meeting led to the creation of our guide for researchers and charities, soon to be followed by a toolkit – developed in association with the Medical Research Council – to help others navigate a path through the challenges of repurposing, and potentially find new uses for medicines that have already been through the clinical trial and licensing process.

We have also continued to play a role in the fight against COVID, supporting and conducting research into potential new therapies and infrastructure to ensure we are better prepared for future pandemics. Many studies from our original call in 2020 have published results that have changed clinical practice or led on to the next stage of clinical trial. The GenoMICC project – in collaboration with the Genomics Consortium, led by Genomics England – has revealed important genetic factors that could lead to new ways to treat COVID-19 (featured on page 10).

Our collaboration with Scottish universities has helped the STOPCOVID project to attract further funding to establish a Pandemic Sciences Hub, while the CRUSH project (a collaboration with the University of Dundee Drug Discovery Unit and the MRC-University of Glasgow Centre for Virus Research) has created a national resource for screening antiviral drugs and a fully integrated hub for pre-clinical drug screening.

Investing in the future

This level of activity would not be possible without the funds we received from monetising a portion of our royalty rights in *Keytruda* back in 2019. Our guiding aim is to invest these funds responsibly and ensure LifeArc's long-term financial ability to translate science for the benefit of patients.

Building out our roadmap for 2030

This year, we published our new strategic direction, setting out how we will change the way diseases are identified, treated and potentially cured. We want to transform patients' lives and we are ambitious to do so on an entirely new scale. We are not being conservative with our spending; we want to invest significant and unprecedented resource – £1.3bn by 2030 – so that patient-focused life science innovations in the UK can truly flourish.

Our Translational Challenges have evolved from the concept of missions, which we have been investigating and progressing for the past year. As we did so we realised that the term 'mission' was too broad to represent what we had in mind. The concept of a translational challenge is about bringing a range of skills and resources together to focus on a particular, complex area of healthcare need. We aim to start on small projects within key themes such as neuronal health and rare diseases or underserved patient groups. We will then build on our incremental knowledge and findings to mature this work into a Translational Challenge.

Our goal is to make an impact for patients in the short, medium and longer term and to demonstrate through example how integrating technology and data early on in translation can focus and improve the success of research and development for products in healthcare.

> "This is a key point for MND research. Dialogue helps accelerate our efforts towards meaningful treatments and ultimately a cure."
>
> **David, living with MND**
> (pictured below)

Evolution not revolution

Our organisation is evolving to meet the challenges of the present and the opportunities of the future.

This year, we brought our diagnostics and therapeutics teams together into a single team, to maximise synergies and opportunities for collaboration. We have brought exciting new skills and experience into the organisation, with key new appointments to the senior leadership team and the recruitment of a new Early Ventures team.

At an executive level, we have also experienced change. During the year we said goodbye to Mike Dalrymple, our Executive Director, Diagnostics and Science Foresight, Andrew Mercieca, our Chief Financial Officer, and Ian Campbell, our Chief Business Officer. I would like to thank all of them for their key contributions to LifeArc, as they have all played a significant role in our success.

In 2022 we recruited Dave Powell into the new role of Chief Scientific Officer (CSO). Dave is an experienced scientist and leader, with exceptional translational knowledge and a fresh perspective. Under his leadership, we will move with pace to integrate new thinking and technologies, accelerate innovation with partners, and drive new ideas and discoveries out of the lab towards the clinic to benefit patients.

As an organisation, we will be shaping our response to the rapid rise of emerging modalities with extraordinary therapeutic potential – in some cases to prevent and cure disease. These developments are transforming the life sciences landscape and what it requires from LifeArc as a translator. They require us to work in a highly collaborative manner with technology experts to move new scientific findings forward and develop the very best therapeutic solutions for intractable diseases.

As a first step in this process, our scientists last year contributed their time and commitment to a comprehensive, scientific review, identifying key strengths across the team and how they map against future challenges. Reviewed and commended by an external panel of experts, our scientific review will help guide which platforms and areas we focus on and where we may want to access external support.

Our interest in new ideas and technologies extends beyond our scientific teams into our funding and advisory activities. Our new Ventures team has already begun to invest in innovative approaches to medical research, taking part in a £13m funding round to invest in Closed Loop Medicine and an $80m Series A funding round for pioneering gene therapy company AviadoBio (formerly Neurogeneus). We anticipate investing in two or three exciting life sciences companies a year, developing new products and technologies with significant, potential patient impact.

A positive future

Our ambition, underpinned by a commitment to invest £1.3bn in innovation by 2030, sets the direction for us to really transform the way diseases are diagnosed, treated and potentially prevented. By keeping what matters to patients and their families front and centre, and coalescing the collective power of the life sciences sector, we will change lives for the better.

Dr Melanie Lee, CBE
CEO – LifeArc
22 March 2022

Reflecting on 2021 – a year of progress

While we continued to play a role in the fight against COVID-19, we also worked with our partners to support innovation in other areas.

We set out our ten-year ambition and launched the strategic pillars to take us there. These strategies (which you can read about on page 12) will build on the scientific, advisory and funding skills we offer and the partnerships we have been developing across our sector.

Here's a snapshot of what we have achieved with our partners during the year.

A busy start – drug screening, a new trustee and lots of investment

In January, we joined with the Medical Research Council (MRC) to fund a new COVID-19 drug screening and resistance hub (CRUSH) in Glasgow. The facility has been helping support the global scientific effort, with pre-clinical drug screening and resistance assays for SARS-CoV-2, as well as for other dangerous and deadly viruses.

In February, we provided £5m in funding to the GenOMICC COVID-19 study led by the GenOMICC consortium in partnership with Genomics England. The study, launched in May 2020, is using genomics to investigate why some people are affected more severely by COVID-19, and will increase our understanding about the disease.

→ **GenOMICC COVID-19 study**
pages 10-11

We also announced our £10m investment in Cambridge's Illumina Accelerator, which provides selected start-ups with seed investment and access to Illumina sequencing systems and reagents. It also brings business guidance, genomics expertise and fully operational lab space adjacent to Illumina's campuses in Cambridge or the San Francisco Bay Area.

We joined the MRC and the Biotechnology and Biological Sciences Research Council (BBSRC) to create an £18m network of three innovation hubs for gene therapies, to advance promising research into new treatments for patients. Later in the year construction began on the new centre in Sheffield and the new NHS Blood and Transplant site in Bristol, while the King's College London/Royal Free/UCL Hub is already able to manufacture clinical grade viral vectors.

Forward-thinking collaboration and investment

In April, we hosted a panel of experts to discuss the opportunities and challenges faced by charities and researchers aiming to find new uses for old medicines. We then published the findings in our report, Repurposing medicines: the opportunity and the challenges. This provides information to support charities and researchers to develop strategies to treat diseases which currently have few effective therapies. Read more about this ground-breaking work opposite.

As part of our support for start-ups, we took part in a £6m financing round into Cumulus Neuroscience, a company advancing a state-of-the-art platform that can capture physiological and digital biomarkers of disease progression and treatment response in patients. The funding supports the delivery of clinical trial data and artificial intelligence-powered insights to develop life changing central nervous system therapies, faster.

Also in May, we joined forces with the MND Association to commit £1m to boost the search for new treatments for motor neurone disease, matching the amount raised by Leeds Rhinos' rugby coach Kevin Sinfield and the MND Association to create the fund dedicated to stimulating research into practical treatments. The fund was later joined by the My Name'5 Doddie Foundation's contribution, bringing the total funding available to £1.5m. Applications have just been peer reviewed and we will reveal the successful projects in 2022.

£6m
financing round
into Cumulus Neuroscience

£500,000
committed by LifeArc
as part of initial, joint funding call to accelerate development of treatments for motor neurone disease

"Tom died just before his fourth birthday. I would have given anything at all for even a five percent improvement in his strength, as that might have been just enough for him to survive. It might have made all the difference."

Anne Lennox
Founding Trustee of Myotubular Trust

Overcoming the challenges of drug repurposing

LifeArc partnered with Pinsent Masons – a leading global law firm – to host a virtual seminar on drug repurposing. The aim of the seminar, which was attended by over 150 people, was to help charities and researchers devise strategies to repurpose drugs and examine the path to treatment.

The value of drug repurposing has been demonstrated during the COVID-19 pandemic; toculizumab, originally an arthritis drug, has proved to be an effective treatment for hospitalised COVID-19 patients (typically in addition to dexamethasone, another repurposed drug shown to have life-saving benefits).

Academics, patient groups and charities have become more interested in drug repurposing as it offers a shorter timeframe, proven safety profile and lower cost. However there are a range of complex commercial and regulatory challenges, exacerbated by a lack of financial incentive for industry or regulatory awareness among academic researchers.

LifeArc CEO Melanie Lee notes that, "improving awareness of the challenges and finding ways to overcome them will help improve the likelihood of potentially life-changing medicines reaching patients in the clinic".

LifeArc Trustee Jo Pisani presented an inspiring case study on how the outlook for women with a rare progressive lung disease was changed by a repurposed medicine. She also stressed the importance of partnering with a range of stakeholders and putting the patient voice at the heart of it all. Anne Lennox, founding trustee of Myotubular Trust, echoed this point, explaining that "Disease-specific organisations can really play a part in getting these therapies over the line".

150+
people attended
virtual seminar on drug repurposing

She also highlighted the importance of patient input in determining outcomes and measuring success. Dan O'Connor of the Medicines & Healthcare Products Regulatory Agency (MHRA) stressed the value of seeking regulatory advice from the outset.

Since the seminar LifeArc has published an overview of the challenges of repurposing. Launched at Findacure's annual Drug Repurposing for Rare Diseases conference 2021, the publication is designed to help researchers to understand and address the challenges, smoothing the progress of repurposing applications.

The LifeArc team are also working on a toolkit, to be launched in 2022. The toolkit will give charities and researchers practical ideas and processes to navigate their way through the complexities of drug repurposing and enhance their chances of delivering life-changing benefits to patients who really need them.

An innovative gene therapy programme, which we helped sponsor, could pave the way for new treatments for neurodegenerative diseases. Experts at the University of Sheffield will test if it could help treat motor neurone disease (MND) and frontotemporal dementia (FTD) patients who have faults in a gene called C9orf72.

In September we said a fond farewell to our 2020 cohort of industrial placement students. Industrial placements are just part of our involvement in developing future scientists; other key programmes that we manage or participate in are the CASE PhD programme the AUTM fellowship and our own Technology Transfer fellowship.

→ **People report**
pages 22-24

> Without the involvement of people living with these conditions their voices wouldn't be considered or at the forefront of decision making. As a result what gets developed doesn't work for the complexities of life."

Kieran
Cystic Fibrosis Trust member

Autumn – a time for scientific discoveries and new partnerships

The ATTRACT study – a phase 2 trial which we helped to fund – found an investigational treatment may reduce the need for a ventilator for hospitalised COVID-19 patients. These findings, published in EClinicalMedicine, have led to a larger trial to evaluate the safety and efficacy of the new treatment in 600 patients.

In November, we announced our new strategy which sets our direction and priorities until 2030.

Our scientists, in collaboration with researchers in the UK and Germany, developed a promising new approach to potentially treat Alzheimer's disease, and also vaccinate against it. The study, published in *Molecular Psychiatry*, found that both the antibody-based treatment and the protein-based vaccine developed by the team reduced Alzheimer's symptoms in mouse models of the disease. We are now working hard to fund a commercial partner to take this work forward.

Together with researchers in Italy we created a screening test that could help speed up the discovery of potential medicines to treat brain and spinal cord diseases amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD).

As part of our Early Ventures strategy we joined a syndicate of investors to support Closed Loop Medicine. The £13m financing deal will allow the company to advance their personalised drug and digital therapy combination products using their proprietary platform. This approach will enable doctors to better use data to optimise drug doses alongside providing non-drug therapies such as behavioural support. For patients this means receiving more personalised care.

Asking patients what matters to them

A key pillar of our strategy is to solve complex healthcare problems through the creation of Translational Challenges. Patient engagement is crucial to help us decide on and then shape what a challenge might address. We've begun by working with patients with motor neurone disease and people with chronic respiratory conditions who experience infections.

We are investigating ways to prevent, diagnose and treat infections in vulnerable patients with underlying chronic respiratory conditions. People who need hospital treatment or have chronic conditions are more likely to be seriously ill or die if they have these infections. Treatments can have severe and potentially life-changing side effects, and sometimes don't work at all.

To define our challenge, we wanted to understand how respiratory infections experienced by people with cystic fibrosis and bronchiectasis (and how they are managed) affect the people living with them. We reached out to several charities, including the Cystic Fibrosis (CF) Trust. Like many medical charities, the CF Trust has a strong model of patient and carer involvement, and people with CF help to shape projects, proposals and relationships with external bodies. With the Trust, we set up a workshop with patients, the clinicians who support them and researchers in June 2021.

Patients, many of whom have experienced infections linked to their condition for decades, told us about their experience.

They described the impact of exacerbations – repeated flare-ups which can have a severe impact – on their health and their ability to live a normal life. We don't understand what causes these exacerbations and it is often difficult to gauge the right level of treatment for each patient. Treatments often don't work; patients may not respond well and may also suffer severe and sometimes permanent side effects from the antibiotics, such as deafness.

Patients told us the following areas would make the biggest difference to them:

1. To be able to detect exacerbations earlier and at home, and collect information on likely severity and duration
2. To improve diagnostics, enabling clinicians to monitor patients' condition and personalise the treatment
3. To have safer, more effective treatments for exacerbations, with shorter treatment courses and better ways to administer therapies

This insight has told us patients need us to work to address the side effects of treatment earlier, develop more accurate diagnostics and devices to improve treatment delivery, and reduce the need for long hospital stays.

We will continue to work closely with patients, via the CF Trust and the Asthma and Lung UK, to ensure our work always has patients at the heart and we are bringing the change they tell us they need.

Bringing the year to a successful close

In December, we welcomed partners, patients, clinicians and scientists to a kick-off meeting for a joint initiative with the MND Association, My Name'5 Doddie, the Medical Research Council and National Institute for Health Research (NIHR). On the day, the MND community came together with patients to plan a joint application to accelerate translational MND research.

Our Ventures team continued to make its mark, as we took part in an $80m Series A funding round for AviadoBio (see opposite) to develop pioneering new gene therapies for neurodegenerative diseases. The funds will be used to advance AviadoBio's lead programme in frontotemporal dementia (FTD) into the clinic, progress its preclinical assets, including a form of MND called amyotrophic lateral sclerosis (ALS), and continue to expand its industry-leading team.

$80m
Series A funding
round for AviadoBio

> Our Early Ventures investing strategy enables us to invest in promising translational research and innovative life sciences companies. LifeArc is pleased to be an investor in Aviado, and we look forward to supporting the company through its next phase of growth."

Clare Terlouw
Head of LifeArc Ventures

AviadoBio – progressing gene therapy innovation

In November 2021 LifeArc participated in a successful $80m Series A funding round for AviadoBio, a company developing pioneering new gene therapies for neurodegenerative diseases.

The funding will be used to progress the company's innovative gene therapy platform targeting therapy to the right areas of the nervous system, taking potential gene therapies from the lab bench to the clinic to help patients with incurable and debilitating illnesses affecting the brain or nervous system.

AviadoBio is pioneering delivery of gene-based medicines into patients' cells. It is targeting specific molecular causes of neurogenerative diseases that mean nerve cells are slowly lost.

The Series A funding will be used to advance AviadoBio's lead programme in frontotemporal dementia (FTD), where nerve cells in the brain die, causing personality, behavioural and language difficulties. The company will also work on amyotrophic lateral sclerosis (ALS), the most common type of motor neurone disease, where motor neurones gradually stop sending messages to the muscles, which significantly shortens life expectancy.

The new funding was a significant investment milestone and will help AviadoBio to take a new gene therapy for FTD into an early-stage clinical trial. A subset of FTD patients have a faulty *GRN* gene, which leads to insufficient levels of a protein called progranulin in the brain. The therapy aims to deliver a functional copy of the *GRN* gene into the patient's brain cells, to slow or reverse disease progression. If successful in clinical development, this could transform treatment for patients with FTD.

LifeArc helped provide the original seed funding for AviadoBio and was one of eight organisations, led by New Enterprise Associates and Monograph Capital, involved in raising this later round of Series A funding. As Early Ventures investment principal Enrique Millan explained, "We are impressed with the transformational prospects of AviadoBio, particularly given the lack of effective treatments currently available for patients with ALS, FTD or other neurodegenerative diseases".

LifeArc has also taken a Board Observer role.

Measuring our impact

We have set out four categories for measuring our impact. These reflect not just our strategic priorities but the breadth of our work in translational science, advice and funding.

Impact areas	Key projects and activities	Examples of our work	Measurable impact in 2021

① Research translation

Key projects and activities

- Translational support provided to MRC, including contract negotiation, patent and trademark management, support in setting up licensing agreements
- Alzheimer's therapy project in partnership with researchers in the UK and Germany has published results and is looking for a commercial partner to progress to clinical trials
- Advise and Connect service set up to provide advice and networking service to companies:
  - 53 internal advisers registered across the whole of LifeArc plus eight external advisers
  - Two partnerships set up with MedCity and Academy of Medical Sciences

Examples of our work

→ Cystic Fibrosis collaboration
page 18

Measurable impact in 2021 – ① Research translation

- **4** patents and one trademark filed
- **7** technology disclosures managed
- **17** new hybridomas deposited
- **19** new licence agreements filed
- **71** % of patent families established to date have been commercialised
- **14** applications received, 10 advice sessions completed by Advise and Connect team

② Stimulating new research

Key projects and activities

- Five companies received funding from Early Ventures including Closed Loop Medicine (new start-up) and AviadoBio (formerly Neurogeneous)
- 10 start-up companies provided with translational/business mentoring and coaching support as part of Francis Crick Institute's KQ Labs accelerator, in which LifeArc is a partner
- Three start-up companies supported through Novartis BIOME HealthHub, to which LifeArc contributes as a partner
- Initial £1.5m funding call set up with MND Association, My Name'5 Doddie, MRC and NIHR to fund research in the MND space

Examples of our work

→ AviadoBio
page 19

Measurable impact in 2021 – ② Stimulating new research

- **18** start-up companies enabled to advance innovative research
- **2** joint research funding applications by MND community, facilitated by LifeArc
- **3** funded COVID projects reported results that could change patient treatment
- **1** Series A funding round in which LifeArc participated, has enabled an early-stage company to pursue further innovation

③ Knowledge generation

Key projects and activities

- The Philanthropic team in partnership with solicitors Pinsent Mason, convened a workshop on drug repurposing, leading to the production of a report on addressing the barriers in drug repurposing
- Several COVID projects supported by LifeArc have published results, including the GenOMICC COVID-19 study, while the ATTRACT project is moving into phase III study
- Outline of potential diagnostic tool for neurodegenerative disease published in Neurobiology of Disease as part of the Dementia Consortium, of which LifeArc is a member

Examples of our work

→ Drug repurposing
page 16

Measurable impact in 2021 – ③ Knowledge generation

- **1** guide to drug repurposing launched
- **18** presentations and nine posters presented
- **20** papers published and LifeArc referenced in more than 10 peer-reviewed publications
- **5** papers produced by LifeArc-supported projects during 2021 in *Nature*, *The Lancet*, *New England Journal of Medicine* and *Neurobiology of Disease*

④ Developing future scientists

Key projects and activities

- LifeArc continues to play a key role in developing future scientists, through industrial placement programmes; involvement in the CASE programme for PhD students; support for the AUTM fellowship; and offering its own Technology Transfer fellowships

Examples of our work

→ Megan's experience
page 24

Measurable impact in 2021 – ④ Developing future scientists

- **9** life sciences university students started their industrial placement in 2021 (and 12 finished)
- **4** CASE PhD students finished their placement during 2021, with a possible six more to finish in 2022
- **15** researchers joined the AUTM and Technology Transfer translational fellowship programmes
- **93** % of AUTM fellows from the first four years of LifeArc's involvement achieved a role in technology transfer before the completion of their fellowship

Strategic report
Governance report
Financial statements

Our people make LifeArc successful

Their skills, enthusiasm and dedication will turn our ambitions into reality.

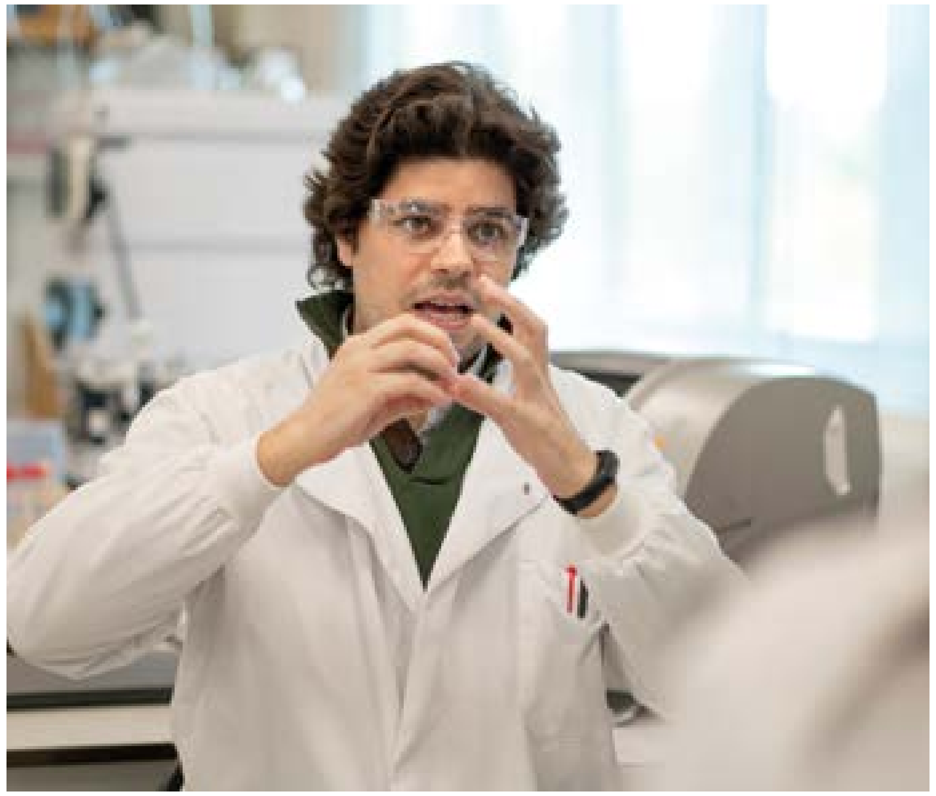
At the end of 2021 we had 219 employees. We value the contribution they make to our work in developing new treatments, diagnostics and interventions to improve patients' lives.

In 2021, like many organisations responding to the pandemic, our people and our ways of working continued to face significant challenges. We have evolved how we work and have focused on the safety and wellbeing of our people. At all times, we have been guided by our principles of purpose, commitment, innovation, collaboration and excellence.

Our strategy and our people

At the same time as we adapted to the second year of COVID-19, the organisation itself has needed to change. Our Board approved our new 10-year strategy in July, and this has brought with it the need to consider how we are organised to implement that strategy.

We have begun to make some significant organisation changes. We have integrated our diagnostics team in Edinburgh and our therapeutics team in Stevenage into a single, translational science department, maximising our capability to find new solutions using the 4 Ds: drugs, diagnostics, devices and digital solutions, underpinned by data. By bringing these elements together we can make significant improvements to the diagnosis, prevention and treatment of disease as well as providing supportive information and life-enhancing products for patients and their carers.



Being one team also opens up greater opportunities for collaboration and supports the development of multi-disciplinary Translational Challenges. The translational science department has set up a team to encourage integration between Edinburgh and Stevenage.

We have also recruited a new Ventures team to deliver our Early Ventures strategic pillar. This team has settled in quickly and by the end of 2021 it had already delivered its first two investments.

Developing our people and expertise in translation

During 2021 we have continued to focus on developing our people. A focus for the year has been to build the knowledge and understanding of key subjects such as use of data in the life sciences field and the techniques required to keep that data safe from cyber-criminals.

We have also built on the development of LifeArc principles in 2020, to help colleagues embed those principles in their working lives. This included the sharing of a booklet setting out the organisation's key principles (shared purpose, innovation, collaboration, commitment and excellence). This helps our people keep these 'front of mind' while considering how they will apply these principles to their own day-to-day work to enhance their performance.

LifeArc is a proactive player in the development of future researchers and technology transfer specialists. We offer a range of development opportunities including an industrial placement scheme, which provides students with a year of paid, hands-on experience of working in drug discovery. The scheme is a powerful tool for encouraging young people to consider a career in life sciences.

We participate in the CASE programme (a PhD studentship that enhances the student's practical knowledge and skills by working closely with a non-academic partner in the development of their research project). Our AUTM and Technology Transfer fellowships, which offer researchers a year-long opportunity to experience technology transfer at first hand and develop their understanding of the discipline, are always over-subscribed. Of those fellows who have completed the course, 100% have gone on to technology transfer roles, while 93% of our AUTM fellows have found posts even before their fellowships have finished.

Our commitment to equity, diversity and inclusion

We recognise the importance and value that a diverse and inclusive environment can create.

We are determined to foster a collaborative, inclusive culture where people can be themselves, feel that their contributions are valued and have a personal stake in LifeArc's long-term ambition.

This year we made significant progress on beginning to look at bringing aspects of ED&I (Equity, Diversity and Inclusion) into the work that we do.

In beginning our ED&I work, we held a series of feedback sessions with employees to understand the opportunities we have both internally and in our external partnerships. This identified a desire for benchmarking where we are now; transparent communication of themes and progress; employee involvement in progressing opportunities; and building knowledge and awareness. Establishing a task force with volunteers was a positive first step, and they have made early impact through leading events to raise awareness about Black History Month and Pride.

Our ED&I Strategy will begin to focus on four thematic areas: Inclusive culture; Inclusive advice and funding; Inclusive science and research; and Inclusive engagement. The task force has set up working groups to support development of each area and work is underway.

To address inclusivity, employees at all levels in the organisation have been encouraged to enrol in unconscious bias training. While we appreciate that training on its own will not create a more inclusive environment, feedback has shown that colleagues have found the courses thought-provoking and an excellent way to raise awareness of how we can make change happen. Nearly 200 people had attended the training by the end of the year.

We are reviewing our HR policies to ensure they embody the principles of ED&I. That includes our approach to recruitment; we are actively encouraging applications to our industrial placement programme from a breadth of universities. We have also taken steps to encourage and support our people to seek opportunities for development outside the organisation; an example of this is the election of LifeArc's co-ordinator for the AUTM fellowship to the AUTM Board.

In terms of diversity of our employees, we are in the process of calculating our gender pay gap and identifying how we will address any gaps over the coming years. We will share our plans with all colleagues during 2022. Gender pay data will be published in future annual reports. We are also beginning to collect data on the ethnicity pay distribution to understand the opportunities this brings to create a more diverse environment for our people.

During 2022, we will identify tangible ED&I outcomes and the actions needed to achieve them. We will also track our progress and provide employees and key stakeholders with regular updates.

Our culture

Following input from our people at all levels, together with engagement from external partners, we have refined the principles and behaviours we aim to live by. These are defined as:

- We are driven by our **purpose**, to put patients at the centre of all we do
- We foster **innovation**
- We are powered by **collaboration**
- We act with **commitment**
- When we get it right, we achieve **excellence**

To reinforce and further embed these during 2021 we introduced an online recognition portal, enabling colleagues to share openly their appreciation of others' contribution or support. With many colleagues still working remotely the portal has helped bridge the gap between working alone and feeling a valued part of the team.

Supporting our people through the pandemic

The pandemic has challenged traditional approaches to working; the challenge has been particularly acute within the medical research industry as organisations look to balance the need for onsite laboratory-based research with the focus on employee safety.

When the lockdown started in early 2020, LifeArc set up a project team to ensure that colleagues had the materials (including IT supplies and office furniture) and the practical and wellbeing support to work safely and effectively from home. The team also oversaw the reopening of our sites and ensured there were effective measures in place to keep them safe. It continues to oversee the risk management of our sites and to ensure they remain a safe environment for our people to work in.

During the latter part of 2021 we introduced a new, hybrid working approach. Using our learning from the coronavirus pandemic, hybrid working is a key strand in the development of a collaborative, inclusive culture. While LifeArc employees have demonstrated that working remotely can be a productive alternative to working in the office, we recognise that face to face contact gives people a sense of belonging and team spirit. Our hybrid working approach, began in September 2021 across our sites, combines the flexibility of remote working with the social and cultural benefits of working onsite. We will capture learnings in the coming months and adapt as required.

Meanwhile, online information sites and news items continue to keep colleagues up to date with government advice and LifeArc safety policies, while a regular drumbeat of town halls (online update sessions to which all employees are invited) has helped keep them in touch with the bigger picture. Senior leaders have played a key role too in keeping up regular dialogue with their teams, both in terms of adapting the hybrid working model to the team's needs and in supporting individuals with any COVID-related issues.

Example of our work:

iCASE: Megan's experience

Megan Sambrook is completing a PhD in Interdisciplinary Biomedical Research at the University of Warwick, a program run by the Medical Research Council doctoral training partnership. Her studies have been supported by LifeArc through an industry CASE (Cooperative Award in Science and Technology) which aims to provide an integrated research training experience between industry and academia. Megan has recently completed her three-month placement at LifeArc.

"Completing a PhD during the COVID-19 pandemic has been extremely challenging, mainly due to the reduced lab time." explains Megan. "Before arriving at LifeArc, my protein of interest was inactive, which stopped me doing further experimentation or assay development. I was fortunate to meet with the Target Delivery Group in my first week at LifeArc to brainstorm ideas, which helped me come up with a solution. In the end, I was able to screen LifeArc's kinase inhibitor library of over 12,000 compounds against my protein, which led to some interesting results."

"I found my LifeArc colleagues knowledgeable, helpful, and kind. They listened, shared their experience and ideas, teaching me the foundations of enzyme kinetics and drug discovery. They taught me how to use specialist liquid handling equipment that we don't have at Warwick, which allowed me to undertake high throughput screening and complete assay validation experiments in a short time frame. Lorenzo, the senior scientist who supervised me, gave me invaluable support and guidance, stayed positive throughout and was always approachable even though he was also mentoring an undergraduate student alongside his own projects."

"My time at LifeArc reminded me why I love scientific research! Completing a PhD can be very solitary and being able to work with a group of people who were happy to share their time and discuss ideas was highly enjoyable. It improved my knowledge of technology transfer, and the drug discovery process, which I know will help me when it comes to the next step in my career."

Understanding our stakeholders

Engaging with our wide range of stakeholders improves our understanding of our sector, of stakeholders' needs and of how we can positively impact patients' lives.

We partner and collaborate with academics, industry, charities, patient groups and other stakeholders to unlock the potential of early-stage science. We also seek out partners who have the commercial resources to take new products further towards the patient.

The nature of these partnerships varies, from service provision to collaborative partnerships focusing on a specific task, such as our partnership with Cancer Research UK and Japanese group Ono Pharmaceutical to advance new immunotherapy drug targets for cancer.

Other traditional relationships have included providing technical support and guidance to charities about their research portfolio, investing (independently or with co-investors) in start-ups and grant-making to progress clinical research. As we develop our strategic pillars however, our stakeholders are increasingly vital to us as a network of current or potential partners, offering the expertise and technology to help us deliver new treatments to improve people's lives.

What our stakeholders need:	How we engage with them:
Patients **Listening to patients helps us understand their needs and ultimately influences the direction of projects to address those needs.** Patients we have spoken to are particularly keen for us, as scientists, to understand the experience of living with a disease, and for us to set goals for our research that will not just address the source of symptoms of the disease but help to improve patients' lives as a whole.	This year, we have begun to work more closely with patient groups. This is particularly important as we plan our Translational Challenges. An example of this is a 2021 workshop run in collaboration with the Cystic Fibrosis Trust, to help improve our understanding of respiratory infection and its impact on patients. This provided a wealth of information on how cystic fibrosis (CF), a genetic condition which causes mucus to build up in the lungs and digestive system, affects peoples' lives – and how life sciences research could make a real difference to those living with the disease. Our conversations with doctors, scientists and patients clarified the need for more research into pulmonary exacerbations; as a result we are exploring ways of better predicting the onset of these exacerbations and of improving treatment when they occur. We have taken a similar approach in partnering with the MND Association, MND Scotland, My Name'5 Doddie, the MRC and NIHR to launch a call for applications to accelerate translational MND research. Between us we have committed £4m to support a single, collaborative application that will address a major block to translation in the MND space. Working closely with both patient associations and clinicians in the MND area helps us to understand more clearly, the experience of living with MND and their needs or expectations for research in this area; it is also helping us to develop an integrated approach to the future treatment of this life-altering disease.
Medical research charities **Medical research charities provide insight into patient need and advocacy for their chosen area. They are also leading funders of early-stage research and a source of innovation.** As charities recover from the financial impact of the pandemic they are increasingly looking to collaborate with organisations such as LifeArc.	LifeArc has an established network of charity partners and an enviable reputation for excellence as experts and an "honest broker" in this sector on a variety of issues ranging from research translation to IP to strategic initiatives. We also have excellent relationships with umbrella organisations such the AMRC with whom we have collaborated to explore and develop strategic projects related to data/AI. In Quarter 1 2021 we funded a workshop, hosted by AMRC, on opportunities and challenges for the sector in the data/AI space. Our charity networks have already definitively demonstrated their value through their contribution to the Expression of Interest (EOI) exercise carried out in Quarter 2 2021 aimed at identifying strategic Translational Challenges.

Our relationships with stakeholders vary from service provision to long-term collaboration, but as we develop our strategic pillars, these stakeholders will become increasingly vital as a network of current or potential partners.

What our stakeholders need: | **How we engage with them:**

Commercial organisations

What our stakeholders need:

Commercial organisations influence our own research and our support for others, by helping us understand what is needed to make a product viable. They also inform where we take this work for further development.

Commercial organisations recognise the problems of being commercially focused in a sector where many projects fail.

They potentially see LifeArc as a strong, strategic collaborator, offering valuable funding and expertise.

How we engage with them:

Our industry stakeholders include a wide range of organisations and companies including those working in pharmaceuticals, diagnostics, biotechnology and start-ups. We have looked to larger organisations for their ability to help us develop innovation into commercially viable product and to make that product available to patients. Our relationships with these groups will evolve as we form new alliances as part of our Translational Challenges.

Working closely with commercial organisations also gives us access to a wider range of s cientific platforms to explore new interventions, Taken alongside the results of our science review, these considerations give us a clearer picture where and how we can impact key areas of patient need.

We engage with a wide range of commercial organisations to understand common interests and priorities, enabling us to develop our networks and collaborations. We are also members and/or supporters of a wide range of industry representative bodies including the UK BioIndustry Association and British In Vitro Diagnostics Association. It is through our membership with the BIA that we were involved in the BIA's COVID-19 therapeutic antibody task force in 2021.

Research and clinical research communities

What our stakeholders need:

Research and clinical research communities are beneficiaries of our scientific, funding and advisory collaborations.

Researchers are concerned about lack of funding, particularly as COVID has both reduced sources of funding and prioritised COVID treatment at the expense of other areas.

They value LifeArc's funding, IP and commercialisation support, and our knowledge and experience in translating scientific ideas. They are open to collaboration.

How we engage with them:

The life sciences research community is a broad group, which spans the public and private sector including universities, medical researchers, technology transfer offices and technology transfer membership groups.

We are members and/or supporters of a wide range of professional bodies involved in representing and promoting the life sciences sector.

Our employees sit on committees or boards for groups like the European Laboratory Research & Innovation Group (ELRIG), the British Society for Gene and Cell Therapy and the Association of Medical Research Charities. Our commitment to supporting gene and cell therapeutic research has led to our work with the British Society for Gene and Cell Therapy, on whose advisory board we have a seat.

We also collaborate with the AUTM Foundation (where our AUTM co-ordinator has been elected to the board), ASTP and Praxis Unico, relationships which have shaped our approach to knowledge sharing and to developing the next generation of life scientists.

LifeArc recently surveyed stakeholders in both the research and industry sectors, to understand their concerns, priorities and how they would like us to interact with them. The survey identified a widespread concern around lack of long-term funding and a gap in skills and knowledge – both areas in which LifeArc is equipped to provide support. COVID is seen as an opportunity, demonstrating what can be done through a more collaborative and nimble approach; and a challenge, making it even more difficult to find funding or support for non-COVID research.

The survey will help us to identify where we can have most impact, where we can leverage shared interests to foster future partnerships and how we can broaden stakeholders' understanding of the support we can provide.

What our stakeholders need: | **How we engage with them:**

Policy makers and opinion leaders

What our stakeholders need:

Policy makers and opinion leaders help us understand key healthcare trends and policies, improving our capacity to impact positively in these areas.

As set out in the life sciences industry vision, the UK government is looking to coalesce UK life sciences research round a number of key healthcare challenges.

How we engage with them:

We work with the National Institute for Health Research (NIHR) and The Chief Scientist Office of the Scottish Government. Our close involvement with these bodies gives us insight into the key themes and priorities driving life sciences research in the UK, which in turn help to drive our translational challenge strategy.

The UK Medicines and Healthcare products Regulatory Agency, which approves vaccines, diagnostics and therapeutics devices, presented at our drug repurposing workshop and are helping us to build our drug repurposing toolkit.

We have created a Strategic Advisory Council to help us connect us to expand our awareness of developments and perspectives in life sciences research. This group brings together a wealth of strategic and leadership experience from across the life sciences sector, to advise our Board on future strategy.

Employees

What our stakeholders need:

Employee engagement is central to LifeArc's success and will be crucial to realising our new strategic direction.

Our employees benefit from understanding our purpose and priorities, and the part they play in our success. Employees tell us they are looking for an environment where their work is valued, where their voices are heard and where they have opportunities to develop and further their careers.

How we engage with them:

LifeArc maintains an active Employee Forum, which acts as a source of feedback on changes and concerns affecting employees. Forum members are elected by their colleagues. We seek employee views through surveys, focusing on particular topics such as hybrid working.

We communicate with employees through a variety of channels, including an intranet carrying regular news and useful information; the intranet is continuously being developed with feedback from users, to address their needs and build an online community. We hold regular town halls to keep employees up to date with our strategy and to facilitate dialogue with our leadership. We also hold local site and/or department meetings on a more informal basis. Alongside all of these we seek employee feedback through surveys and focus groups.

Our Equity, Diversity and Inclusion (EDI) strategy is being supported by a team of volunteers from across the organisation to identify opportunities, develop awareness of ED&I issues and shape plans for improving inclusion across LifeArc. This team has taken a lead in engaging employees in learning sessions on everything from Black History Month to unconscious bias.

Suppliers

What our stakeholders need:

LifeArc engages a range of third parties to supply products or services. In some cases we may also be providing grants or exchange expertise and ideas with suppliers.

Suppliers need to understand our strategy, receive feedback on performance and be kept informed as things change.

How we engage with them:

LifeArc is further developing our dedicated procurement strategy and investing in a procurement team to increase focus on our engagement with suppliers throughout the lifecycle of our relationship.

At the selection and onboarding stage, we are broadening our evaluation to include risk attitude and management, strategic alignment and accountability.

We have started categorising suppliers as primary, secondary or tertiary, which will help direct our existing engagement with them. Together with the procurement team, stakeholders will meet primary suppliers to manage and review service level agreements and key performance indicators; also conducting regular questionnaires to ensure the relationship is working well for both parties.

For secondary suppliers, our focus will be more reactive, where we or they raise an issue or when a category is due for review. Our relationships with tertiary suppliers are primarily process-driven, with scope for either LifeArc or the supplier to discuss issues or opportunities should they arise.

Sustainability and carbon reporting 2021

We are committed to reducing our energy use and greenhouse gas emissions. Below we set out our energy use and carbon emissions for 2021, and how we are approaching our responsibilities to reduce our environmental impact.

Reporting period

We are reporting on energy usage and emissions from 1 January to 31 December 2021. 2021 was another year of considerable disruption, with many colleagues working from home, so data recorded for LifeArc sites do not fully represent the energy usage and carbon footprint of all our activities. As a result, we are not in a position to set out a comprehensive programme of energy efficiency improvement at this stage. We are, however, taking steps to understand our energy usage and identify priorities for emissions reduction (see pull-out box opposite).

Methodology

We have followed the GHG Reporting Protocol – Corporate Standard for company reporting to identify and report relevant energy and greenhouse gas (GHG) emissions over which we have operational control. This includes owned assets where LifeArc is directly responsible for electricity and/or gas supplies across its three sites (Stevenage, London and Edinburgh). We have also considered the seven main GHGs covered by the Kyoto protocol, converting to tonnes of CO_2 equivalents (CO_2e).

We have considered the impact on our environment arising from our operations and identified GHG emissions generated via energy use to be the most significant. We based our assessment on financial spend and the opportunity for LifeArc to control impacts.

The sources used for energy are actual billing data, with no estimates being used. Business travel mileage includes staff driving their own vehicles for LifeArc business. For business mileage, actual mileage claims were used.

In completing this summary, we have followed the 2019 HM Government Environmental Reporting Guidelines and the 2020 UK Government's Conversion Factors for Company Reporting.

This report has been prepared in compliance with the Companies (Directors' Report) and Limited Liability Partnerships (Energy and Carbon Report) Regulations 2018, also referred to as Streamlined Energy and Carbon Reporting (SECR).

UK Greenhouse gas emissions and energy use data	2021	2020
Energy consumption used to calculate emissions (kWh)	2,486,290.68	2,554,256.07
Energy consumption break down (kWh):		
– gas	0.00	0.00
– electricity	2,471,565.00	2,541,999.00
– transport fuel	14,725.68	12,257.07
Scope 1 emissions in metric tonnes CO_2e		
Gas consumption	0.00	0.00
Total Scope 1	0.00	0.00
Scope 2 emissions in metric tonnes CO_2e		
Purchased electricity	524.79	592.64
Scope 3 emissions in metric tonnes CO_2e		
Business travel in employee-owned vehicles	3.62	3.04
Total gross emissions in metric tonnes CO_2e	528.41	595.68
Intensity ratio tonnes CO_2e per FTE	2.31	2.77
Intensity ratio purchased electricity Tonnes CO_2e per 1,000 sq m floor area	0.125	0.142

1 Based on average number of employees, which for 2021 was 228 (for 2020 – this was 215 employees).
2 Based on 4,188 sq m total floor area (London, Stevenage, Edinburgh).

Voluntary disclosures

We have considered our overall operational emissions impact to support a full baseline year analysis.

Our carbon footprint assessment (described opposite) has widened our reporting scope to support a full baseline analysis. We have considered emissions from water, waste and material use, plus the impacts from employee commuting in 2020 (data from 2021 was not yet available at the time of review).

Impacts from material use and freight were minimal and below a reasonable materiality threshold, based on the data that we were able to collect. Employee commuting, waste and business travel on the other hand, were significant. Water usage has been reported on account of its broader environmental impact.

This work has enabled us to explore our impacts fully and to develop a reasonable baseline year emissions summary, from which future targets and reduction pathways can be considered and developed.

Energy-saving actions undertaken during 2021

We are still at an early stage in our reporting, but our increasingly detailed analysis of our energy usage will help us to identify our reduction priorities and develop a reduction roadmap. In the short term, this will focus on the main electricity impacts of LifeArc, including an immediate feasibility assessment for deploying renewable energy on site and procuring renewable sources of energy supply. This will support a wider reduction plan, taking in other key emissions sources. This focus alongside any accompanying targets will be on both gross emissions and emissions-to-revenue intensity level.

Priorities for action – 2022 onwards

In 2022, we will continue to deepen our understanding of how we use energy, particularly electricity, so we can identify ways of reducing our overall footprint. With this information, we will set carbon targets for future years and plan the corresponding actions, and track progress towards our targets. We will also consider including more sources of carbon footprint where feasible, as our operations adjust to the changing COVID-19 situation.

Carbon footprint assessment

During 2021, as part of our commitment to measure and reduce our environmental impact, we commissioned a carbon footprint assessment. This provides more granular data than our regulatory reporting provides, to help us identify suitable carbon reduction targets and initiatives to achieve them.

The footprint assessment here includes a wider range of significant emissions sources than are included in the statutory report, including water usage, waste disposal, business travel and employee commuting.

Data is from 2020 as there was insufficient scope of data available for 2021, at the time of reporting. The ongoing COVID pandemic caused significant disruption to our operations in 2020 and as such we will use 2021 data, once available, to re-baseline our data for future reporting.

The granular data confirms that the major material contributors to our reported footprint are electricity consumption at our sites (and the emissions associated with distribution of that electricity to LifeArc) followed by employee commuting. Business travel is close to the materiality threshold we set at 5% of the overall footprint. Our Stevenage R&D site is the largest consumer of electricity, followed by our Edinburgh R&D site and London head office. (We intend to include our presence on the Crick site in future reports.)

In future we will be able to use intensity metrics (which, unlike gross emissions figures, will not require re-baselining) to understand progress with carbon reductions, even as more emission sources are included in footprint assessments. These metrics may include carbon footprint per employee or per site floor area.

Granular data – 2020

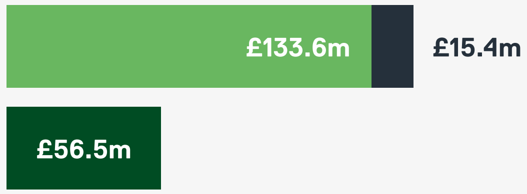
Emissions source	2020 metric tonnes CO_2e
Re-evaluated 2020 Scope 2 electricity mandatory disclosure[1]	594.58
Electricity distribution[2]	51.13 (12,267 kWh)
Water usage	1.04
Waste	18.88
Business travel and accommodation	35.93
Employee commuting	127.50
Total gross emissions (mandatory and voluntary)	**832.09**

1 2020 disclosure for electricity consumption was re-evaluated to include previously unavailable data.
2 Emissions associated with distribution of electricity to LifeArc for consumption.

Financial review

We have focused on investment planning and allocations as we prepare to implement our ambitious strategy.

Key financial metrics



- Gains on investments £133.6m
- Investment income £15.4m
- 2021 expenditure £56.5m

	2021 £m	2020 £m
Total incoming resources	17.9	9.1
Total resources expended	56.5	49.7
Net gains on investments	133.6	54.8
Net movement in funds	95	14.3
Funds balance carried forward	1,313.9	1,218.9

Overview

In 2021 LifeArc spent £56.5m to further our public benefits objective to improve human health by advancing the progress of life sciences research through translation. This is an increase of £7.0m (14%) on 2020. The spend went primarily into our laboratory-based research and the funding support and investments we are making into promising translational science.

Total returns on investment totalled £149.1m, including investment income of £15.4m and gains from investments of £133.6m. This compares with £60.8m in 2020 and has helped strengthen our balance sheet with a net increase in funds for the year of £94.7m.

Income

Our income is now predominantly made up of investment income and gains on investments which will fund the expenditure required to successfully implement our strategy and achieve our objectives.

Total incoming resources of £17.9m (Dec 2020 – £9.1m) was made up of £2.4m (Dec 2020 – £3.1m) income from charitable activities and £15.4m (Dec 2020 – £6m) investment income. Income from charitable activities includes £0.7m (Dec 2020 – £1.5m) of contract and royalty income, and £1.3m (Dec 2020 – £1.2m) received for intellectual property management and technology transfer services.

Following the successful completion of the part monetisation of our royalties from *Keytruda* in May 2019, our income from *Keytruda* fell to £nil as of 2020. LifeArc has retained the contractual right to receive a share of future royalties in the event that *Keytruda* royalties exceed an agreed level, which is not anticipated until 2023.

LifeArc generated investment income during the year of £15.4m (Dec 2020 – £6m) as we transitioned from low-risk, low-return money market funds held in 2020 to our long-term strategic asset allocation by Dec 2021.

LifeArc generated gains on investments during the year of £133.6m (Dec 2020 – £54.8m). This includes £127.7m from our investment portfolio, £1.5m from Eliem Therapeutics Inc (IPO completed in August 2021), and £0.7m from early venture investments.

This investment income and gains supports the charity's long-term aim to continue advancing promising life science ideas into medical breakthroughs.

Expenditure

Total resources expended during the year were £56.5m, an increase of 14% (Dec 2020 – £49.7m). These cover activities that directly relate to our public benefit objective. This includes the cost of generating funds, corporate and governance costs and general support costs that are not directly attributable to charitable activities.

This expenditure includes ongoing funding commitments, diagnostics and therapeutics discovery projects throughout the year. (See opposite for an overview of some of these initiatives.)

It also includes our ongoing commitment to tackle COVID-19. LifeArc has committed up to £27m to address the coronavirus pandemic. In the year, we spent a total of £9.2m (2020 – £9m) to help tackle COVID-19, including £8.3m (2020 – £5.6m) in funding for external projects to identify and support clinical trials that offered the best chance of finding treatments for COVID-19. This also included £5m to the GenOMICC COVID-19 Study led by the GenOMICC consortium in partnership with Genomics England.

As part of our focus to stimulate and support the progress of early start-ups, we have made a range of investments including:

- £5.9m in five early-stage companies within the UK through our Early Ventures focus. LifeArc aims to bridge the funding gap for start-ups to a point where they could attract later stage funding.
- £650k into four data-driven health companies as part of the KQ Labs accelerator programme for start-up companies with high growth potential.
- A £10m commitment in 2020 in the Illumina Accelerator with £0.4m invested at December 2021, which provides selected genomic-focused start-ups with seed capital and access to sequencing systems and reagents.

As we seek to support the academic research community to translate their research we also spent an initial £1.2m of our £7.6m commitment towards the creation of innovation hubs for gene therapies shared with the Medical Research Council and the Biotechnology and Biological Sciences Research Council.

Additional commitments made during the year include:

- A £15m commitment in a Life Sciences Fund investing in novel science seeking breakthroughs that address critical unmet medical needs, which have the potential to change the practice of medicine.
- A commitment of £1.5m to research into motor neurone disease (MND). In May 2021 we contributed £0.5m, matched by the MND Association and My Name'5 Doddie, to create a fund dedicated to stimulating research into practical treatments. We have since contributed £1m to a six-way initiative, launched in December, for a joint application to accelerate translational MND research.

Significant recent funding allocations

In addition to expenditure on our own translational science projects and on advising and supporting our partners, we made significant additions to our funding work in 2021.

COVID Fund	Spent in 2021 £9.2m	Allocated fund £27m
Early Ventures	Investments in 2021 £5.9m	Early stage companies 12
Illumina Accelerator Cambridge	Commitment made at Dec 21 £10m	Spend in 2021 £0.4m
S.V. Health	Commitment made at Dec 21 £15m	
Philanthropic Fund	Committed by Dec 21 £8.4m	Committed by Dec 20 £6.5m
Crick Fund	Contracts awarded at Dec 21 £1.6m	Contracts awarded at Dec 20 £1.2m
Innovation Hubs for Gene Therapies	Commitment made at Dec 21 £7.6m	Spend in 2021 £1.2m
MND	Commitment made at Dec 21 £1.5m	

Investment review

2021 was another eventful year in markets, dominated by a number of themes including higher-than-expected inflation and the persistence of the COVID-19 pandemic. With a backdrop of very accommodative monetary and fiscal policies around the world, risk assets continued to be in demand. This environment has been conducive to the further improvement in the overall value of LifeArc's investment portfolio.

At the start of 2021, we began to transition all the monies from our legacy asset managers into our target portfolio. We divided the portfolio into two parts: the Long-Term Investment Portfolio and the Operational Portfolio. At the outset, the Long-Term Portfolio was £953.9m and the Operational Portfolio £200m. The aim of the former is to generate returns in excess of the UK Wage Inflation Index plus 3.5% over the long term for the sustainability of LifeArc. The purpose of the Operational Portfolio is to cover expected running costs and funding requirements over the next few years. Considering the shorter-term time horizon of the Operational Portfolio, it is currently invested in low-risk vehicles, such as money market funds.

By the end of June 2021, the Long-Term Investment Portfolio was fully weighted to the Strategic Asset Allocation target of 52% for public equities. This was achieved by investing in a number of passive global equity funds with a bias toward Environmental, Social and Governance (ESG) factors. In the first half of the year, we made an allocation to global bonds, global index linked bonds and credit. The overall weighting to public fixed income at the end of the year was 11%. We embarked on our long-term plan to invest 20% of the portfolio into private markets, making three commitments during the year. It is expected to take at least five years to fully commit to our private markets allocation, therefore we have invested the monies earmarked for these investments into two ESG-orientated global equity passive funds. These passive equity funds will be the source for funding future private market capital requirements. In the latter part of the year, we made our first investment into a hedge fund. We aim to construct a hedge fund portfolio of at least 10 funds within the overall Long Term Investment Portfolio.

Having gained market exposure to global equities via low cost and easily transacted passive funds, we embarked on the search for a number of actively managed equity funds. LifeArc's Investment Committee considers that by adopting a diligent approach to manager selection, outperformance of passive funds can be achieved net of fees. In the fourth quarter of 2021, we reduced our exposure to passive funds and invested with two global equity managers, while maintaining the strategic asset allocation (SAA) target to equities. In December, seven active equity managers were approved by the Investment Committee for investment.

Reserves policy

LifeArc holds reserves to ensure that, as far as is reasonably possible, our long-term strategic plans can be funded, given certain assumptions about future investment returns and income. All of LifeArc's reserves are held in pursuance of our charitable objectives.

As a charity that is primarily funded by investment returns, LifeArc necessarily holds significant reserves to generate enough cash to fund our operations and further our mission. In addition, we hope to generate future returns from our work in translational science and translational funding, but this work is extremely risky, subject to high attrition rates and runs over a lifecycle of around 10 years before commercial returns are realised.

The LifeArc Board has determined that LifeArc should seek to continue to exist for the long term to support translational science in the UK and beyond. Our policy, reviewed by the Trustees annually, is to hold reserves which, along with anticipated future income, will enable the charity to:

- meet our expected spending plans over the next 10 years and achieve our strategic objectives; and
- ensure that there is a balance of reserves available at the end of the 10 years for subsequent plans.

The Board considers that the most appropriate measure for the charity's reserve policy is our liquid and readily realisable investments which excludes our planned allocations to illiquid private investments which will be held for a long-term time horizon. The level of these reserves as at 31 December 2021 was £954.2m (Dec 2020 – £929.0m). In setting the reserves policy the Board of Trustees have considered the Charity Commission guidance CC19.

Auditors

PKF Littlejohn LLP has signified its willingness to continue in office as auditors.

Disclosure of information to auditors

So far as each Trustee is aware at the time of the approval of this Board report:

- there is no relevant audit information of which LifeArc's auditors are unaware
- the Trustees of the Board have taken all reasonable steps to make themselves aware of any relevant audit information and to establish that the auditors are aware of that information

How we identify and manage risk

Risk management is vital to LifeArc's strategy. It supports informed decision-making on the risks and opportunities that could impact our ability to implement our strategy.

Risk management is one of the key foundations for our long-term success, particularly as LifeArc embarks on a period of significant change. At LifeArc, risk management is a shared responsibility backed by a robust risk framework.

Roles and responsibilities

Responsibility for the overall management of risk lies with the Board of Trustees. The Board decides our risk appetite (the degree of risk we are prepared to accept in pursuit of our strategy) for key areas of activity, in line with our strategic aims. The Audit & Risk Management Committee (ARMC) is responsible for ensuring there is an appropriate framework in place to manage risks and keep them within our agreed appetite. The ARMC ensures there are robust assurance frameworks to support strategy delivery and that good governance is embedded in everything we do. The Committee also provides assurance to the Board itself.

The Executive Management Team, led by the Chief Executive Officer (CEO) is responsible for allocating appropriate resources to implement risk management strategy, processes and culture. Individual Executive Directors have responsibility within their area for ensuring employees and line managers play their part in identifying and managing risk.

The risk manager ensures there is an effective framework for identifying, assessing and mitigating risks in line with our strategy. The internal audit function co-ordinates with the risk manager to independently assess LifeArc's risk framework and ensure it is continually improving.

LifeArc's risk framework

LifeArc's risk management policy aims to minimise threats to the delivery of our corporate strategy. It does do within appropriate limits of practicability and cost.

Through an active risk management process we aim to ensure that managers have measures in place to mitigate our principal risks, in line with our risk appetite. We take an agile approach, adapting quickly to changes (whether external or internal) and to the evolution of our strategy. This includes identifying new risks and agreeing how to mitigate them.

Risk management process

Reporting and assurance ↑

Board of Trustees
- Establishing the risk appetite of the charity as part of the strategic planning process, keeping this under review and validating it at least annually

Audit and Risk Management Committee
- Overseeing the effectiveness of risk management
- Regular review of key risks
- Overseeing the reporting of risk to the Board and to external stakeholders

Executive
- Overall collective responsibility for supporting risk management
- Sets the tone and influences the culture of risk management across LifeArc
- Owning the process for identifying, analysing, responding to threats and opportunities within LifeArc's internal and external environments
- Maintaining an effective system of internal control that supports the achievement of LifeArc's objectives
- Monitoring the effectiveness of risk identification, risk assessment and risk management strategies

Employees
- Embrace and incorporate a risk management culture into working practices

Our goal is not to eliminate all risks but to keep them to a level that is acceptable to the Board. Some aspects of our strategy carry inherent risk, including Translational Challenges and investing in new, unproven scientific projects. Other risks are not cost-effective or practical to eliminate entirely. However, whatever the level of risk associated with an activity, we aim to ensure we have good oversight and appropriate mitigation in place.

Progress is regularly reviewed; risks are assigned owners and the risk manager conducts regular reviews with them. The ARMC conducts a corporate review every quarter and the Board does so at least twice a year, using a risk heat map to help prioritise their discussions. There are also periodical 'deep dives' into key risk areas with the risk owner, carried out by the ARMC.

The CEO, Chief Financial Officer, General Counsel and Company Secretary routinely attend meetings, together with internal and external audit teams and other individuals with responsibility for risk oversight. A watch list is also maintained to keep emerging risks under observation.

During 2021 we made progress in reducing our key risks. We reviewed the governance around LifeArc venture investment activity and made further improvements in the area of IT/cyber risk. We also increased the role of the Portfolio Review Board, assessing the appropriate LifeArc projects as a combined portfolio. This portfolio will include our Translational Challenges as they get under way. Our investment portfolio has been aligned with our strategic asset allocation and is guided by an Environmental, Social and Governance (ESG) policy.

Linking risk management to our strategic pillars

In 2021, as the 2030 strategy was set, we evolved our risk management framework to ensure it focuses on risks affecting our 2030 strategy. In 2022 LifeArc managers will continue to focus on this evolution. Our strategic plans are ambitious and entail activities in rare diseases and other areas of underserved patient need, which of their nature carry a high risk.

Our people will be key to the delivery of our strategy. We have introduced a number of structural and cultural initiatives to help people understand their role in doing so. Our aim is that risk management becomes an integral part of our day-to-day operations and culture. We have also recognised the key role played by third parties and are working with our procurement function to ensure we select and manage partners appropriately.

Identifying principal risks

Risks to our strategy will come from a variety of sources. Those that the Board considers to be the most relevant are summarised below and explained in more detail opposite. Risks are measured in relation to two parameters:

- Likelihood of occurrence, from highly unlikely to highly likely
- Impact if the risk materialises, ranging from insignificant to severe

The third parameter is our risk appetite, indicating the level of risk which we are prepared to tolerate; this will vary depending on the nature of the risk and the activity.

Risk management is a dynamic concept and organisations often actively improve their control environments to further mitigate key risks. This is particularly relevant to LifeArc as, in the light of our evolving current strategy, we have defined some current risks as beyond our tolerance and therefore needing further action. People risks, management of change and our newly defined strategic risks fall into this category.

Other risks may be viewed with a more tolerant attitude as a necessary feature of future activity; these include risks around investment, where our horizons have become longer than they were. Where we have identified action to be taken, plans have been developed with risk owners and appropriate timelines agreed for implementation. As our strategy continues to evolve, so will our risk management.

Principal risk analysis

	Risk*	Likelihood	Impact	Current net risk position	Risk appetite
	Strategic risks				
1	Translational Challenges	Medium/High	Medium/High	Medium/High	Medium/High
2	Early Ventures	Medium	Medium/High	Medium/High	Medium/High
3	Third parties	Medium	Medium/High	Medium/High	Medium
	Financial risks				
4	Investment reserve returns	Medium	Medium	Medium	Medium
	Operational risks				
5	Cyber-attack/IT security	Medium	Medium	Medium	Low/Medium
6	Platform technology	Medium	Medium	Medium	Medium/High
7	People capability and capacity	Medium	Medium	Medium	Low
8	Management of material change	Medium	Medium	Medium	Low
9	COVID-19 – impact of further restrictions	Low	Medium	Low	Low
10	Major health and safety incident	Low	Medium/High	Low	Low

* Actions are in place to ensure alignment between the risk score and the risk appetite

Our principal risks and how we mitigate them

We identify and mitigate risks arising from our activities and those of our partners, as well as the evolving environment in which we operate.

The corporate risk register

Risk area	Key mitigation or in-progress actions	Links
1. Translational Challenges (TCs) To deliver our TCs effectively we need to: — develop a strategy that aligns to our goals — Establish effective operational plans to deliver the strategy — Maintain effective relationships with our people and partners If we don't there is a risk that we won't achieve the intended patient impact.	**In place:** — Board of Trustees approves strategy and spending envelope — Scientific Committee endorses TC project portfolio from a scientific perspective — Portfolio Review Board oversees progress and decision-making in line with LifeArc's strategy — Initial review of risk and mitigations — Agreed objectives for 2022 for the TC Portfolio **In progress:** — New organisation structure for the delivery of the TCs — Develop leadership and resource to deliver the expanded TC portfolio. — Establish streamlined internal governance through TC leadership teams, including appropriate performance metrics	**Change in risk profile vs 2020** New risk **Risk assessment** Medium/High
2. Early Ventures Our venture capability is a key element of our translational funding strategy. As with any investment there is a risk that we will not achieve impact for patients or financial returns. If we don't achieve financial returns, it may impact the financial sustainability of the Charity.	**In place:** — Early Ventures Investment Committee (EVIC) with 50% independent membership oversees investments and disposals in line with the Board approved investment strategy — EVIC provides assurance to the Board on effectiveness of processes and controls — Deep scientific diligence provided by the LifeArc Opportunity Assessment Group supports the team's understanding of scientific and translational risks — Strategy is to diversify portfolio of investments and co-invest with like-minded investors — Documented investment processes with defined team roles and responsibilities **In progress:** — Continuing to monitor changes in the regulatory environment such as the National Security and Investment Act	**Change in risk profile vs 2020** Reduced **Risk assessment** Medium/High
3. Third parties Successful relationships with third party innovators, licensees and other partners will be critical to our strategy. If we fail to select, deliver or manage these relationships effectively we risk reduced impact, unsuccessful outcomes and damage to our reputation.	**In place:** — Risk based authority levels — Financial and reputation diligence on new parties — Ongoing monitoring of suppliers and partners — Contract review and approval process — Monitoring of contracts to ensure partnering obligations have been met **In progress:** — New alliance management process being developed — Enhanced procurement function being implemented — Organisation and systems to be realigned with new process — Third party risk and assurance assessment underway	**Change in risk profile vs 2020** Increased **Risk assessment** Medium/High

Risk area	Key mitigation or in-progress actions	Links
4. Investment portfolio which supports LifeArc financial sustainability If we do not achieve the required investment performance over a 10-year horizon, we may not be able to fund the delivery of the LifeArc strategy.	**In place:** — Top-tier global custodian and respected external investment consultant in place — Board approved investment policy, risk appetite and investment parameters — Investment Committee supplemented by co-opted members sets strategy and monitors performance of the investment portfolio — Environmental, Social and Governance policy — Monthly monitoring of investment performance **In progress:** — Operating model governing interaction with the global custodian and investment consultant — Processes and controls documented — Internal audit in Q2 2022	**Change in risk profile vs 2020** No change **Risk assessment** Medium
5. Cyber-attack and IT security Loss of data, for example due to unauthorised system access or a cyber-attack, would damage our reputation and restrict our activities.	**In place:** — Cyber security awareness training for all employees and ongoing awareness activities — Cyber-attack response plans — Key preventative measures including perimeter firewalls, two factor authentication for key systems, anti-virus and anti-ransomware software, and vulnerability detection and responses — Engagement of specialists to regularly assess the IT security control environment — 24-hour security operations centre — Data recovery systems in place and reviewed for resilience **In progress:** — Assessment of how an IT and cyber assurance system could further improve control environment	**Change in risk profile vs 2020** No change **Risk assessment** Medium
6. Platform technology Development of platform technologies and offerings is a key part of LifeArc's strategy. We need to identify, understand and secure appropriate platforms to meet our strategic needs. If we don't we may not be able to deliver the targeted patient impact.	**In place:** — New role of Chief Scientific Officer recruited — External review of current platform capabilities (to determine a RAG status and then determine course of action for Green and Amber) complete **In progress:** — Evolve the platforms we need to support our Translational Challenges — Establish Data workstream to define the data platforms we need — Consideration of devices for Therapeutics and Diagnostic uses — Evolve a scientific resource base to ensure translational sciences are fit for purpose — Progress cultural project to improve empowerment, decisiveness and accountability	**Change in risk profile vs 2020** Slightly reduced **Risk assessment** Medium

Risk area	Key mitigation or in-progress actions	Links
7. People capability and capacity If we are unable to recruit, develop, and retain appropriately skilled employees and Trustees it may impact our ability to deliver our strategy.	**In place:** — Principles framework based on LifeArc's purpose — Appointment of new Trustees and new Chair of Board of Trustees to further shape and guide organisational direction — Remuneration Committee oversight to ensure that LifeArc has appropriate reward practices — Nominations Committee responsible for succession planning for the Board and Executive — Progressed key areas of our organisation model to ensure we can deliver future strategy **In progress:** — Focus on developing a culture that supports our ambitions — Systems to drive data-driven insights and an improved employee experience — Building improved capability to deliver strong leadership up and down the organisation — Refresh reward and recognition strategy to drive high performance — Talent mapping and succession conversations	**Change in risk profile vs 2020** No change **Risk assessment** Medium
8. Management of material change The organisation will need to make targeted changes, to realise its long-term ambition. If we do not deliver the desired change we may miss significant opportunities for patient impact.	**In place:** — Specific role (Head of Culture and Change) to support management of change — Change framework and associated tools in place to create change capability and resilience — Launch of the LifeArc Principles framework — Announcement of the high level LifeArc 2030 Strategy **In progress:** — Further embed capability framework and tools to improve our ability to manage change — Continuing the roll out of our Principles to support culture change during 2022 — Continued evolution of the operating model and leadership to deliver an effective organisation	**Change in risk profile vs 2020** No change **Risk assessment** Medium
9. COVID-19 – impact of further restrictions Potential future COVID-19 restrictions mean a risk of further disruption to the scientific portfolio. This may impact the delivery of patient benefit while a further lockdown could well impact employee morale.	**In place:** — Steering Group to oversee our ongoing response, including guidance for colleagues, provision of wellbeing resources and regular communications — Site based governance and oversight teams with site policies and procedures	**Change in risk profile vs 2020** Reduced **Risk assessment** Low
10. Major health and safety incident Failure to maintain the health and safety of employees could harm our people, have a significant reputational impact, or lead to disruption of our activities. It may also have serious legal consequences.	**In place:** — Laboratory facilities managed in accordance with regulatory standards (COSHH), and NEBOSH qualified laboratory manager — LifeArc Health and Safety Committee meets quarterly — Health and safety risk assessments (per activity) — Monthly reporting to the Executive Director meetings and quarterly to the Board — Peer reviews to ensure compliance	**Change in risk profile vs 2020** No change **Risk assessment** Low

Governance report

Governance report

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Chair's governance review

> Our Strategic Advisory Council acts as a sounding board for the Trustees and Executive and allows us to compare our plans and progress with those elsewhere in the sector."
>
> **Dr John Stageman CBE**
> Chair – LifeArc

The past year was notable for the clear articulation of our long-term strategy which should transform the way diseases are treated and the quality of patients' lives. That we were able to reach this point while continuing to address the challenges of COVID-19 and support innovation in key areas of life sciences research owes so much to our people, our culture and the governance frameworks that we now have in place.

This year we have updated those frameworks in line with changes to the Charity Governance Code. We have also revisited our approach to risk management and control to reflect our longer-term strategy and the greater deployment of funds. We have also completed our move to a foundation governing model by establishing our Strategic Advisory Council as an independent source of constructive challenge and advice to both the Board and the Executive.

The importance of governance

Good governance is fundamental to LifeArc's long-term success. This includes the rigorous scrutiny and oversight of our objectives and strategy for achieving them, as well as ensuring that we have the right structures, people, processes and controls to implement that strategy effectively.

The Trustees refer to the Charity Commission's general guidance on public benefit when reviewing the charity's aims and objects and in setting our strategy and planning future initiatives. This ensures LifeArc's activities are in line with our charitable objectives set out in our Articles of Association. Our Investment, Nominations, Remuneration, Scientific and Audit and Risk Management Committees play key roles in overseeing strategic activities and actively managing risk.

Charity Governance Code

The Trustees are guided by the principles of the Charity Governance Code for Larger Charities ('the Code') and the Charity Commission's guidance. The Code was updated in December 2020 and sets out seven principles of good governance practice for charities in England and Wales.

The Integrity principle has been strengthened to emphasise the importance of charities reflecting their ethics and values in everything they do, including decision-making.

A new ED&I (Equity, Diversity and Inclusion) principle sets out best practice for charities and recognises the need to treat this work as a continuing journey. Boards are encouraged to think about why equity, diversity and inclusion are important to their charity. They should also assess the current level of understanding on ED&I and monitor, measure and be transparent about progress.

LifeArc Trustees have taken part in a training programme this year to give them a practical grounding in ED&I principles and how these are reflected in LifeArc's strategy. The terms of reference of the Remuneration and Nominations Committees also include explicit responsibility for overseeing ED&I aspects of changes to strategy and policy.

Other significant developments include the establishment of an Environmental, Social and Governance (ESG) investment policy, to guide our investment team in their deployment of funds across our portfolio. Non-executive Trustees who are not on the Remuneration and Nominations Committees can attend meetings of these committees as observers if they wish, to make discussion and decision-making as transparent as possible.

Assessing the Board's effectiveness

To realise our long-term strategy, we need strong foundations. This means ensuring the right range of skills and the right leadership in each key area.

In January 2021, we commissioned an external skills audit of the Trustees to build a picture of the breadth of skills and experience within the current Board and identify future opportunities. The results fed into a review of committee membership and has also informed recruitment to the Board, with appointments building the range of experience needed to deliver our long-term strategy.

Our three new Trustees, Sue Wallcraft, Ian Nicholson and Dr Ian Gilham, bring vital skills and experience, particularly in the areas of financial management and research commercialisation. Sue Wallcraft is an experienced general counsel and company secretary with over 25 years' experience in the pharmaceutical industry and health charities. Ian Nicholson has over 35 years of international experience in management and venture financing within the life sciences sector, while Ian Gilham brings significant international experience in research, development and commercialisation of diagnostic and pharmaceutical products.

We said goodbye to four Trustees over the course of the year – Peter Keen, Dr Sally Birtles, Paul Mussenden and Andrew Mercieca (our Chief Financial Officer). I would like to thank them for their commitment to effective governance and the valuable leadership roles they have played, and their contribution to the evolution of our strategy.

Strategic Advisory Council

Our Strategic Advisory Council met for the first time in October 2021. It acts as a sounding board for the Trustees and Executive and also allows us to compare our plans and progress with those elsewhere in the sector.

The membership, which is drawn from key life sciences stakeholder groups (including academic, research charities, pharma, biotech, digital, policy and patient care), brings a wider scientific, industry and patient perspective to the Board's strategic thinking.

Realigning our attitude to risk

The Board is evolving its approach to risk management. This is reflected in LifeArc's investment strategy, which allows for a higher level of short-term risk to enable us to finance our ten-year plan to transform patients' lives.

The charity will, however, retain a strong risk management structure, including updated delegation of authorities to committees and the Chief Investment Officer, to allow them to take appropriate risks.

LifeArc's greater investment in young companies, through our new Early Ventures funding, will be closely monitored. Melanie Lee, our CEO, will sit on the Early Ventures Investment Committee and one other Board member will be present at its meetings.

Exercising good governance during COVID

The Board and committees convened regularly in 2021, with the option of meeting online, avoiding COVID-related disruption.

Trustee visibility increased despite the restrictions imposed by the pandemic, as several Board members took advantage of video conferencing to take part in employee town halls and partner seminars.

In November, members of the Board met with key stakeholders at LifeArc's annual reception – the first in two years – to launch our long-term strategy.

Conclusion

The governance changes we made in 2021, and those that are in the pipeline, will ensure our controls and structures have the strength and flexibility to guide LifeArc towards a new and exciting future, transforming the treatment of diseases and improving patients' lives.

I would like to thank the members of the Board, the Executive Management Team and all LifeArc employees for their hard work and support during 2021. This is my final report as chair of the Board as I complete my appointed term. The Trustees have selected Dr Ian Gilham to take the helm from April 2022 and I wish him every success in continuing the journey.

Dr John Stageman CBE
Chair – LifeArc
22 March 2022

Board of Trustees

By setting strategic direction, and overseeing risk management and governance, the Board supports the Chief Executive Officer and the Executive Management Team in achieving the charity's purpose.

At period end the following Trustees were in place:

Dr John Stageman CBE

Appointed: 29/09/14

Role: Chair of the Board

Skills: A pharmaceutical and biotechnology research specialist, John chaired the HealthTech and Medicines Knowledge Transfer Network for the Technology Strategy Board (TSB) and was a member of the Biotechnology and Biological Sciences Research Council (BBSRC). He became a CBE in 2022 for services to medical research.

Dr Melanie Lee CBE

Appointed: 14/11/19

Role: LifeArc CEO

Skills: Melanie has 30 years' experience in the biopharmaceutical industry and the medical research charity sector. She was previously Chief Scientific Officer at BTG and has held senior positions at GSK, Celltech and UCB. She is a former Trustee of Cancer Research Technology and Cancer Research UK and is currently a director of Sanofi.

Aisling Burnand MBE

Appointed: 20/11/17

Role: member of Nominations Committee

Skills: Aisling was formerly Chief Executive of AMRC and held a similar role at the BioIndustry Association, where she championed UK biosciences. She received an MBE in 2007 for services to science.

Dr Ian Gilham

Appointed: 21/10/21

Skills: Ian has a global track record in research, development and commercialisation of diagnostic and pharmaceutical products. He has managed mergers and acquisitions, both as CEO of Axis-Shield and as non-executive chair of Horizon Discovery plc. Ian is currently non-executive chairman of Aptamer Group genedrive plc, and Cytox Group.

Dr Les Hughes

Appointed: 01/03/16

Role: Chair of Scientific Committee

Skills: Over 30 years in the pharmaceutical industry, Les has worked as a manager and consultant in the US, Europe and Asia. At AstraZeneca he oversaw the delivery of c.50 oncology and infection projects into pre-clinical testing, of which three are now on the market. He was elected a Fellow of the Academy of Medical Sciences in 2003.

Dan Morgan

Appointed: 20/11/17

Role: member of Audit and Risk Management Committee

Skills: Dan has over 20 years' experience of private capital markets, including venture investment in life sciences. He is a Member of the Institute of Chartered Accountants in England and Wales.

Ian Nicholson

Appointed: 21/10/21

Role: Trustee

Skills: Ian has over 35 years' experience in licensing, mergers and acquisitions and market development in the UK, Europe and the US. He is chairman of Bioventix plc; a non-executive director at Clinigen Group plc, and an operating partner at Advent Life Sciences LLP.

Jo Pisani

Appointed: 17/12/20

Role: Trustee

Skills: A former leader of PwC's Pharmaceutical and Life Sciences practice, Jo has significant strategy, commercial and operations experience. She serves on the boards of the UK Dementia Research Institute, The RSAGroup, MedCity and Beacon. She is a member of the foresight advisory board for University of Birmingham.

Lynne Robb

Appointed: 08/06/20

Role: Chair of Audit and Risk Management Committee

Skills: A former CFO, Lynne's experience includes supporting the merger of the Cancer Research Campaign and Imperial Cancer Research Fund and the creation of the Francis Crick Institute. She is a Trustee of Prostate Cancer UK and a non-executive director of the Medicines Discovery Catapult.

Dr Mike Romanos

Appointed: 01/03/16

Role: member of Scientific Committee

Skills: Mike is an experienced biopharmaceutical industry leader with scientific breadth and extensive knowledge of translation. He is CEO of Microbiotica, previously CEO of Crescendo Biologics, global VP at GSK, Translator in Residence in Imperial College and Venture Partner in UK Innovation and Science Seed Fund.

Susan Wallcraft

Appointed: 21/10/21

Role: member of Audit and Risk Management Committee

Skills: Sue is an experienced general counsel and company secretary with over 25 years' experience in the pharmaceutical industry. She is currently general counsel and company secretary for Vernalis (R&D) Limited and previously held the same role at the Wellcome Trust.

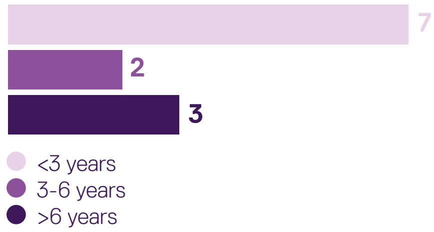
David Zahn

Appointed: 15/08/19

Role: Chair of Investment Committee

Skills: A Chartered Financial Analyst and qualified Financial Risk Manager, David is Head of European Fixed Income at Franklin Templeton. He is a governor and chair of the investment committee at The Health Foundation, and a non-executive director at the Health Data Research UK and CFA Society of the UK.

Board tenure:



Board gender diversity:

Changes to the Board of Trustees:

Ian Gilham
joined 21 October 2021

Ian Nicholson
joined 21 October 2021

Susan Wallcraft
joined 21 October 2021

Peter Keen
served until 15 July 2021

Sally Burtles
served until 15 July 2021

Paul Mussenden
served until 14 December 2021

Andrew Mercieca
served until 31 December 2021

For more detailed Trustee biographies, please visit **lifearc.org/governance**

Governance structure and management 2021

Promoting the charity's success

The Trustees have a duty to promote the success of the charity by advancing its charitable objectives to promote medical research for the benefit of the public. In doing so, they are required by section 172(1) of the Companies Act 2006 to take into account a number of factors. These include:

— the likely consequences of decisions in the long term;

— the interests of employees;

— the need to foster the charity's relationships with stakeholders;

— the impact of the charity's operations on the community and the environment;

— the desirability of the charity maintaining a reputation for high standards of business conduct and;

— the need to act fairly between members.

The people report on pages 22-24 explains how LifeArc protects and promotes the interests of its employees. The 'Understanding our stakeholders' report on pages 25-27 explains in more detail how LifeArc engages with its stakeholders to promote the long-term success of the organisation. The sustainability and carbon reporting review on pages 28-29 outlines the actions the organisation is taking to understand and improve its impact on the environment.

As a company limited by guarantee, LifeArc does not have any shareholders. With the move to a foundation model, serving Trustees are LifeArc's only members.

Charitable objectives

LifeArc is a company limited by guarantee and a registered charity, established in 2000. The charity's governing document is its Articles of Association, which sets out its charitable objectives as follows:

— To promote the public benefit by improving human health and medical research, in particular by assisting the progress of the scientific discoveries and new technologies arising from research into therapeutic treatments, drugs, diagnostics, other technologies or information resources.

— To work with industry, charities, universities, the health service and other relevant bodies, as well as conducting our own research and development as needed to accelerate the progress of these discoveries and technologies to the stage at which they:

  — Are capable of being made generally available to the medical profession and the public for practical application for the improvement of health and/or

  — Are transferred or licensed to a third party to progress development of such discoveries or technologies towards such goals.

Structure, governance and management

The Board is responsible for setting strategy, ensuring that there are the necessary financial, human and physical assets to meet the charity's strategic aims; monitoring the performance of the charity; and overseeing risk management. It is also responsible for Trustee and Executive Management succession planning, overseeing any changes to the charity's constitution and upholding its culture and values. The day-to-day running of the charity is delegated by the Trustees to the Executive Management Team.

Trustees

LifeArc's Board is comprised of 12 Trustees. One of these Trustees is an Executive member. The Trustees fulfil the legally defined roles of members and directors of the charitable company.

Non-Executive Trustees are recommended by the Nominations Committee and appointed by the Board through an open process. They have broad and varied backgrounds, bringing to LifeArc not only the requisite governance experience, but also the diverse range of skills the charity requires, including biomedical sciences, investment fund management, charities, finance and law.

As recommended under the Charity Governance Code, Trustees are appointed for a renewable term of three years and are eligible to stand for re-election for a maximum of three consecutive terms. New Trustees are briefed on the charity's objectives as well as their duties and statutory obligations. They are also given relevant Charity Commission guidance. Trustees meet regularly with the Executive Management Team to discuss all areas of the business.

Trustees are not remunerated for their role at LifeArc. They are paid expenses. Other expenses incurred in the course of their duties are paid directly by the charity. Executive Trustees are remunerated in respect of their executive service.

Trustees as members

As a company limited by guarantee, LifeArc is required by company law to have members who act as nominal guarantors in the event that the company should ever be wound up. LifeArc has adopted a foundation model of governance where the membership is restricted to serving Trustees. The charity has recruited a Strategic Advisory Council to provide strategic advice and feedback to the Board from the charity's key stakeholders; the council had its first meeting on 4 October 2021.

Committees of the Board

The Board of Trustees delegates oversight and assurance for key business functions to the five dedicated Board committees: Audit and Risk Management Committee, Investment Committee, Nominations Committee, Remuneration Committee and Scientific Committee.

Most Trustees serve on one or more committees. The committees can co-opt non-trustees to provide additional expertise.

Conflicts of interest

LifeArc's policy on conflicts of interest applies to Trustees and employees alike. A register of Trustees' and Executive Directors' interests is reviewed at each Board meeting and all employees complete a 'conflicts disclosure form' annually. Completed forms are reviewed by the Company Secretary in order to identify and manage any areas of potential conflict. The Board of Trustees has elected not to publish the registers of gifts, hospitality and interests owing to potential data privacy implications.

Management Committee

Executive Management Team

The Executive Management Team is responsible for the day-to-day running of the charity under authority delegated by the Board of Trustees. The team, under the leadership of the CEO, proposes to the Board where the charity should invest its time, money and expertise. It proposes strategic changes to the organisation's activities prior to submission to the Board or committees. It is also responsible for developing the financial and operational plans for Board approval and monitoring financial performance.

Melanie Lee
Chief Executive Officer

Edward Bliss
General Counsel & Company Secretary

Fiona French
Executive Director, Human Resources

Andrew Farquharson
Executive Director, Technology Transfer

Graham Duce
Chief Investment Officer

Richard Godfrey
Interim Chief Operating Officer

David Powell
Chief Scientific Officer

Andrew Mercieca, Chief Financial Officer, left LifeArc in December 2021
Ian Campbell, Chief Business Officer, left LifeArc in December 2021
Mike Dalrymple, Executive Director, Diagnostics and Scientific Foresight, left LifeArc in March 2021
Justin Bryans, Executive Director, Drug Discovery, left LifeArc post-year end, in February 2022

Board and committee attendance

Committee memberships

Member	Board meetings	Audit and Risk Management Committee meetings	Investment Committee meetings	Investment Committee Interim meetings	Nominations Committee meetings	Remuneration Committee meetings	Scientific Committee meetings
	Meetings attended						
John Stageman (Chair)	◉ ◉ ◉ ○ ◉		— — — ● ●	— —	◉ ◉	◉ ◉	● ● ● ●
Paul Mussenden (Deputy Chair)	● ● ● ● ●	◉ ◉ ◉ —	● ● ● ○ —	● ●	● ●	● —	
Aisling Burnand	○ ○ ● ● ●				● ●	— ●	
Sally Burtles	● ● — — —					● —	● ● — —
Ian Gilham	— — — ● ●						
Les Hughes	● ● ● ● ●				● ●		◉ ◉ ◉ ◉
Peter Keen	● ● — — —	● ○ — —	● ● ● — —	● ●	● —		
Melanie Lee	● ● ● ● ●						
Andrew Mercieca	● ● ● ● ●						
Daniel Morgan	● ● ● ● ●	● ● ● ●					
Ian Nicholson	— — — ○ ●						
Jo Pisani	● ● ● ● ●					— ●	
Lynne Robb	● ● ○ ● ●	● ● ● ◉			● ●		
Mike Romanos	● ● ● ● ○						● ● ● ●
Sue Wallcraft	— — — ○ ●	— — — ●					
David Zahn	● ● ● ● ●		◉ ◉ ◉ ◉ ◉	● ●	● ●		
Co-opted members							
Simon Gibson			● ● ● ● ○	○ ●			
Jonathan Marriott			● ● ● ● ●	○ ●			
Cindy Rose			● ● ○ ● ●	○ ●			

Paul Mussenden stood down from the Committees on 13/10/21 and from the Board on 31/12/21
Sally Burtles and Peter Keen stood down from the Board at the July meeting
Ian Gilham, Ian Nicholson and Sue Walcraft were appointed to the Board at the October meeting

Andrew Mercieca stood down from the Board at the December meeting
Sue Wallcraft joined the ARMC Commitee and Aisling Burnand joined the Remuneration Committee on 15/11/21
John Stageman joined the IC Interim Commitee and Jo Pisani joined the Remuneration Committee on 15/7/21

Key: ◉ Chair
● Attended
○ Not attended
— Not applicable

Strategic report
Governance report
Financial statements

Committee Reports

Audit and Risk Management Committee Report

Committee members

Lynne Robb (chair), Susan Wallcraft, Dan Morgan

Priorities for 2021

- Deep dive reviews into key risk areas
- Finance improvement programme
- Risk evaluation in delivery of the longer-term LifeArc ambition
- Third-party risk evaluation

Key activities and decisions

A number of deep dive risk reviews were presented to the Committee during the year, focusing on: LifeArc's science portfolio, people and change management (in light of the charity's strategy for achieving its long-term ambition) and cyber risk (reflecting the increasing risk of cyber-criminals targeting organisations). The Committee also reviewed the progress and outcomes of internal audits. The cyber security audit recommendations were closely monitored and the Committee endorsed a number of recommendations to mitigate the risks identified. We will continue to monitor their implementation.

The Committee monitored the execution of a financial improvement programme and structural procurement review. These programmes have improved reporting and finance partnering within LifeArc. A centralised procurement function has been put in place along with a tiered system for suppliers.

The Committee has reviewed LifeArc's approach to risk appetite in delivering its long-term strategy and ambition, ensuring that our need for bold pursuit of long-term benefits is balanced by strong, appropriate governance.

The Committee oversaw the internal and external audit programme delivery, approved their 2022 plans, and recommended the 2020 annual report for approval by the Board.

Finally, Peter Keen and Paul Mussenden retired from the Committee during the year, and I would like to thank them for their significant contributions over the past several years. I am very pleased to welcome Susan Wallcraft as a new member of the Committee.

Priorities for 2022

In addition to the routine work to provide assurance to the Board of Trustees on financial planning, reporting, risk management, governance, assurance, and overseeing budget process, approving the internal audit programme and scrutinising the annual accounts, there are particular areas of focus:

- Ensure there is an appropriate level of assurance over execution of the strategy
- Monitor the continuing improvement of the management of cyber risk
- Review and monitor outcomes of key deep dive reviews and internal audits, ensuring delivery of improvements
- Support the implementation of a third-party risk management framework

Lynne Robb
Audit and Risk Management Committee Chair

Scientific Committee Report

Committee members

Les Hughes (chair), Mike Romanos, John Stageman

Priorities for 2021

Science review and update of science strategy; review of science team structure; oversight of translational science project portfolio.

Key activities and decisions in 2021

The Scientific Committee reviewed and commented on the evolution of a new science strategy for LifeArc. A key element of this has been a comprehensive science review, discussed with the Committee in both July and October, which identified the key capabilities that will be required by LifeArc to achieve its goal of delivering significant patient benefit. These findings, which have been validated by an external review board, were presented to the Board on 21 October and the outcomes will be used to guide key decisions on the platforms and areas LifeArc will focus on over the coming years for both its internal resources and external support.

As part of LifeArc's wider strategy the Committee also endorsed the reorganisation of the diagnostics and therapeutics departments into a single translational science team under a single Executive Director. This reorganisation, while retaining the specialisation and capacities of the diagnostic and therapeutic discovery teams, will increase opportunities for collaboration and realise synergies as LifeArc pursues its three strategic pillars.

The Scientific Committee, in its governance oversight role, has continued to receive the recommendations of the Portfolio Review Board on prioritisation and rationalisation of the current project portfolio. This process allows our resources to be focused on the existing projects most likely to deliver impact for patients as well as to free up vital resources for redeployment to current and future Translational Challenges. The review process is working well and has seen substantial resources moved to follow the strategic shift in the portfolio.

Priorities for 2022

- Consider LifeArc's plans to build and refine platform capabilities within Stevenage, Edinburgh and London (the Francis Crick Institute)
- Work with the Executive on the development of a portfolio of translational challenges
- Continue to monitor the evolution of LifeArc's project portfolio in line with strategic priorities

Les Hughes
Scientific Committee Chair

Investment Committee Report

Committee members

David Zahn (Chair), Peter Keen, Paul Mussenden, John Stageman, Jonathan Marriott, Cindy Rose

Priorities for 2021

- Approve LifeArc's strategic asset allocation (SAA) for Board approval
- Approve the investment policy statement (IPS) for the investment portfolio
- Track transition from existing asset managers to Investment Committee approved target portfolio in accordance with SAA
- Oversee search and selection of active fund managers
- Continue to evolve the ESG policy for the investment portfolio

Key activities during 2021

Sustainable investment is a key enabler for the realisation of LifeArc's long-term ambitions. In the wake of a new investment strategy, agreed by the Board in 2020, the Investment Committee endorsed a strategic asset allocation aimed at moving LifeArc's assets into a diversified portfolio. The proposal included a timeline and identification of a range of passive investment vehicles into which the investment team proposed to move more of our assets.

In addition to supporting the organisation's long-term ambition, the asset allocation aligns with the organisation's Environmental, Social and Governance investment policy, as well as ensuring a proportion of LifeArc's assets are available for drawdown to support ongoing strategic activity.

The strategic allocation was approved by the Board and actioned during the first half of 2021. The Investment Committee was kept informed of the transition from existing asset managers to the new portfolio. The Committee also endorsed a small allocation to fixed income vehicles.

Following the strategic allocation of assets, the investment function embarked on a search for active equity fund managers with a view to enhancing the performance of the investment portfolio. The Committee played a proactive role in reviewing potential candidates and approving the funds that were proposed. By the year end, eight active managers had been selected. One manager was funded in Q4 2021, with the remainder to be funded in early 2022.

ESG considerations were integral in the selection of the active managers. Indeed, all chosen managers adhere to our ESG investment policy. The committee remains closely involved in the development of the ESG policy for the investment portfolio.

Priorities for 2022

- Monitor performance of investment portfolio in line with the organisation's long-term goals
- Manage the investment portfolio in line with the investment policy statement
- Complete the transition from passive equity funds to active equity managers
- Continue to evolve the ESG investment policy
- Establish a small portfolio of hedge fund managers to further diversify the overall investment portfolio

David Zahn
Investment Committee Chair

Nominations Committee Report

Committee members

John Stageman (chair), Aisling Burnand, Les Hughes, David Zahn, Lynne Robb

Priorities for 2021

- Succession planning
- ED&I oversight in relation to succession planning
- Board and SAC membership
- Board performance review

Key activities and decisions during 2021

The terms of reference of the Nominations Committee were amended in 2021 to reflect the improvement and monitoring of LifeArc's approach to Equity, Diversity and Inclusion (ED&I) This includes staff development and recruitment and how the organisation selects members of its Board and Strategic Advisory Council.

Two Trustees retired and three new Trustees were recruited during the year. The Committee reviewed the membership of all committees and subcommittees of the Board to ensure each has the balance of skills and experience appropriate to its terms of reference. The Committee's recommendations were approved by the Board.

The Committee reviewed the Board's succession plans carefully, reflecting on the skills and experience that will be required for the best governance and strategic guidance of LifeArc's future strategy.

The Board supported the expansion of the Nominations Committee with the addition of Lynne Robb, David Zahn and Les Hughes to lead the external and internal search and appointment of a new Chair. A new appointment was concluded post-year end.

The formation of the new Strategic Advisory Council (SAC) was another key priority for 2021 and the Committee played a proactive role in recruiting members to the council. The SAC held its inaugural meeting in October 2021.

Priorities for 2022

- Agree and enact a refreshed Equity, Diversity and Inclusion strategy and plan for the whole of LifeArc
- Conclude appointment of new Chair
- Review the optimal size of the Board
- Appoint a new Chief Finance Officer
- Support executive appointments as the shape of the Executive Management Team evolves

John Stageman
Nominations Committee Chair

Remuneration Committee Report

Committee members

John Stageman (Chair), Aisling Burnand, Sally Burtles, Paul Mussenden, Jo Pisani

Priorities for 2021

- Reviewed LifeArc's reward strategy
- Continued to focus on enhancing the employee experience
- Broadened the Committee's terms of reference to review the reward system as a whole and how it helps to underpin a collaborative, diverse and inclusive organisational culture

Key activities during the year

Reward and remuneration are key elements of LifeArc's organisational transformation and culture, critical to engaging our people and delivering our strategy. During 2021 the committee has been closely involved in supporting the evolution of LifeArc's reward strategy. This strategy was originally set out in 2018 and has been a vital reference point for reward decisions to date.

However, the Committee recognises the need for remuneration strategy to align, not only with LifeArc's long-term strategic direction but with the organisation's ED&I (Equity, Diversity and Inclusion) strategy and its desire to foster a collaborative, inclusive culture. A review of the reward strategy began late in 2021, and the committee is being regularly briefed on progress. During the first half of 2022 we will finalise this and begin engagement of our people.

The Committee is keen to ensure that salaries at LifeArc remain competitive and benchmarked using external, sector-specific compensation data. During the year it has been briefed on the annual Willis Towers Watson and OBN benchmark data surveys, as well as advice from PwC on targeted incentive plans. The benefits package available to employees continues to match the upper quartile of the organisations surveyed, while offering the flexibility to allow employees to tailor their package. This was particularly important in 2021 as we worked to ensure our turnover rate did not cause undue pressure on our strategy delivery. Our benchmarking provides confidence in our market position.

The Committee also recognises the need for more transparency and understanding, supported in 2021 by initiatives such as a new reward portal and a series of pensions workshops to improve understanding of a key benefit. This will help ensure we keep pace with LifeArc's organisation transformation and ensure we can both attract and retain talent within a challenging sector. The Committee has also been briefed on gender pay gap data, and how these reflect a number of sector-wide themes. Plans were discussed for engaging employees around gender pay gap results in 2022 and creating an action plan as we seek to align our reward strategy with our broader ED&I strategy. Our results will be shared externally on our internet and be made available to employees, with regular updates.

Given the challenges of 2020 the Committee felt it would be inappropriate to base 2021 pay and bonus awards entirely on individual outputs. A decision was made not to award pay increases to LifeArc executive and senior leadership, although bonus awards were made to differentiate outstanding performance. This decision applied to senior leaders only. During 2022 we will review our executive reward philosophy, to ensure we can continue to attract and retain leaders of the calibre required to enable our ongoing transformation.

In November 2021 the Committee was updated about benchmarking completed on all roles, to understand where we are positioned against the market. This is key to attraction and retention as the talent landscape continues to remain competitive. Actions will be taken within the broader reward plan in 2022 to ensure we remain competitive.

The Committee has seen some significant personnel changes during the year. Sally Burtles and previous Committee Chair Paul Mussenden have stepped down; I would like to thank both Sally and Paul for their commitment and contribution to what has long been a key area of organisational policy. Jo Pisani and Aisling Burnand joined the Committee during 2021 and I am sure we will benefit from their insight and contribution in the coming year.

Priorities for 2022

- Continue to monitor how LifeArc's remuneration philosophy reflects the principles of equity, diversity and inclusion and support the reporting on diversity, including gender and ethnic pay reporting and action plans
- Input to and shape the reward strategy refresh and engagement plan

John Stageman
Remuneration Committee Chair

Responsibilities of the Trustees statement

Trustees' Annual Report 31 December 2021

Statement of Trustees' responsibilities

The Trustees (who are the directors for the purpose of company law) are responsible for preparing the Trustees' report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Practice). Company law requires Trustees 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 its incoming resources and application of those resources, including its income and expenditure for the period. In preparing these financial statements the Trustees are required to:

- Select suitable accounting policies and then apply them consistently.
- Observe the methods and principles in the charities' Statement of Recommended Practice (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.
- Prepare the financial statements on a going concern basis unless it is inappropriate to presume that LifeArc will continue in operation.

The members of the Board are responsible for keeping proper accounting records that are sufficient to show and to explain the charitable company's transactions and to disclose, with reasonable accuracy, at any time, the financial position of the charitable company and to ensure that the financial statements comply with the Companies Act 2006.

The Trustees are also responsible for safeguarding the assets of LifeArc and for taking reasonable steps for the prevention and detection of fraud or other irregularities. The Board met five times during the reporting period (16 March 2021, 15 July 2021, 23 September 2021, 21 October 2021 and 14 December 2021). NB: there was no separate membership AGM as the membership is coterminous with the Board.

This Annual Report was approved by the LifeArc Board on 22 March 2022 and signed on its behalf by

Dr John Stageman CBE
Chairman

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Independent auditor's report to the trustees and members of LifeArc

Opinion
We have audited the financial statements of LifeArc (the 'charitable company') for the year ended 31 December 2021 which comprise the Statement of Financial Activities, the Balance Sheet, the Cash Flow Statement and notes to the financial statements, including significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including FRS 102, The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

— give a true and fair view of the state of the charitable company's affairs as at 31 December 2021, 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; and

— have been prepared in accordance with the requirements of the Companies Act 2006, the Charities and Trustee Investment (Scotland) Act 2005 and regulation 8 of the Charities Accounts (Scotland) Regulations 2006.

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 FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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

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

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

Other information
The other information comprises the information included in the trustees' annual report, other than the financial statements and our auditor's report thereon. The trustees are responsible for the other information contained within the trustees' annual report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of 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 themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

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' annual 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' annual report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception
In the light of our knowledge and understanding of the charitable company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report and the directors' report included within the trustees' annual report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities Accounts (Scotland) Regulations 2006 require us to report to you if, in our opinion:

— adequate and proper 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.

Responsibilities of trustees
As explained more fully in the trustees' responsibilities statement, the trustees (who are also the directors of the charitable company for the purposes 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
We have been appointed as auditor under section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and under the Companies Act 2006 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

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.

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

— We obtained an understanding of the charitable company and the sector in which it operates to identify laws and regulations that could reasonably be expected to have a direct effect on the financial statements. We obtained our understanding in this regard through discussions with management, sector research and application of cumulative audit knowledge and experience of the sector.

— We determined the principal laws and regulations relevant to the charitable company in this regard to be those arising from the Companies Act 2006, Charities Act 2011, Charities and Trustee Investment (Scotland) Act 2005 and Financial Reporting Standard 102.

— We designed our audit procedures to ensure the audit team considered whether there were any indications of non-compliance by the charitable company with those laws and regulations. These procedures included, but were not limited to enquiries of management, review of minutes of meetings of the trustees and review of legal and regulatory correspondence.

— We also identified the risks of material misstatement of the financial statements due to fraud. We considered, in addition to the non-rebuttable presumption of a risk of fraud arising from management override of controls, that there was potential for management bias in the valuation of unlisted investments. We challenged the assumptions underpinning the fair value assessments by management, comparing these to financial information pertaining to the relevant investment at the year end and post-year end. We also identified potential for management bias in the depreciation rate applied to tangible fixed assets, and we addressed this by considering the useful economic life applied for the types of asset held, and re-performing the calculation to ensure it had been performed accurately in line with the stated accounting policy.

— As in all of our audits, we addressed the risk of fraud arising from management override of controls by performing audit procedures which included, but were not limited to: the testing of journals; reviewing accounting estimates for evidence of bias; and evaluating the business rationale of any significant transactions that are unusual or outside the normal course of business.

Because of the inherent limitations of an audit, there is a risk that we will not detect all irregularities, including those leading to a material misstatement in the financial statements or non-compliance with regulation. This risk increases the more that compliance with a law or regulation is removed from the events and transactions reflected in the financial statements, as we will be less likely to become aware of instances of non-compliance. The risk is also greater regarding irregularities occurring due to fraud rather than error, as fraud involves intentional concealment, forgery, collusion, omission or misrepresentation.

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

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, and to the charitable company's trustees, as a body, in accordance with Regulation 10 of the Charities Accounts (Scotland) Regulations 2006. Our audit work has been undertaken so that we might state to the charitable company's members and trustees 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, the charitable company's members as a body and the charitable company's trustees as a body, for our audit work, for this report, or for the opinions we have formed.

Alastair Duke
(Senior Statutory Auditor)

For and on behalf of PKF Littlejohn LLP
Statutory Auditor

15 Westferry Circus
Canary Wharf
London E14 4HD

Date: 22 March 2022

PKF Littlejohn LLP is eligible for appointment as auditor of the charity by virtue of its eligibility for appointment as auditor of a company under section 1212 of the Companies Act 2006.

Statement of financial activities

For the year ended 31 December 2021

	Notes	Unrestricted funds £000s	Restricted £000s	Total funds December 2021 £000s	Total funds December 2020 £000s
Income and endowments from:					
Charitable activities	1	1,970	373	2,343	3,124
Trading activities					–
Investments	2	15,448	–	15,448	6,004
Other income	3	86	–	86	20
Total income and endowments		17,504	373	17,877	9,148
Expenditure on:					
Raising funds	4	1,911	–	1,911	1,938
Charitable activities	5	54,226	373	54,599	47,721
Provisions	19	–	–	–	–
Total expenditure		56,137	373	56,510	49,659
Net gains on investments	14/15	133,614	–	133,614	54,802
Net income		94,981	–	94,981	14,291
Net movement in funds	21	94,981	–	94,981	14,291
Reconciliation of funds:					
Total funds brought forward	21	1,218,941	–	1,218,941	1,204,650
Cash flow hedge reserve	21	–	–	–	–
Total funds carried forward	**21**	**1,313,922**	**–**	**1,313,922**	**1,218,941**

All income and expenditure derives from continuing activities.

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

Full comparative figures are presented in note 31.

The accounting policies and notes on pages 57 to 74 form part of the financial statements

Balance sheet

As at 31 December 2021

Company number: 2698321

	Note	LifeArc 2021 £000s	LifeArc 2020 £000s
FIXED ASSETS			
Tangible fixed assets	12	10,797	12,234
Intangible assets	13	13,890	16,514
Investments	14	1,129,078	444,462
		1,153,765	473,210
CURRENT ASSETS			
Investments	15	162,984	740,410
Debtors	16	2,764	2,553
Cash at bank and in hand		4,703	12,559
		170,451	755,522
Creditors: amounts falling due within one year	17	(9,559)	(9,056)
Net current assets		160,892	746,466
Total assets less current liabilities		1,314,657	1,219,676
Provision for liabilities	19	(735)	(735)
Net assets		**1,313,922**	**1,218,941**
CHARITY FUNDS			
Unrestricted funds	21	1,073,878	1,165,127
Designated funds	21	240,044	53,814
Restricted funds	21	–	–
Total charity funds		**1,313,922**	**1,218,941**

The accounting policies and notes on pages 57 to 74 form part of the financial statements

The financial statements were approved and authorised for issue by the Board on 22 March 2022.

Signed on behalf of the Board of Trustees.

Dr John Stageman CBE
Chairman

Statement of cash flows

For the year ended 31 December 2021

	Note	Dec 2021 £000s	Dec 2020 £000s
Cash flow from operating activities	23	(49,300)	(25,616)
Net cash flow provided by/(used in) operating activities		(49,300)	(25,616)
Cash flow from investing activities			
Payments to acquire tangible fixed assets		(1,363)	(2,704)
Payments to acquire intangible assets		(203)	(598)
Payments to acquire investments		(712,556)	(294,299)
Receipts from sale of investments		163,776	80,157
Dividends, interest and rents received from investments		15,448	3,010
Reclassification from fixed asset to current asset investment		2,032	24,914
Decrease in current asset investments		577,426	227,884
Increase in cash held for investment		(3,116)	(2,698)
Net cash flow provided by/(used in) investing activities		41,444	35,666
Change in cash and cash equivalents in the year		(7,856)	10,050
Cash and cash equivalents at 1 January		12,559	2,509
Cash and cash equivalents at 31 December		**4,703**	**12,559**
Cash and cash equivalents consist of:			
Cash at bank and in hand		4,703	2,525
Short-term deposits		–	10,034
Cash and cash equivalents at 31 December		**4,703**	**12,559**

The accounting policies and notes on pages 57 to 74 form part of the financial statements

Accounting policies

For the year ended 31 December 2021

General information and basis of preparation
LifeArc is a charitable company limited by guarantee in the United Kingdom. In the event of the charity being wound up, the liability in respect of the guarantee is limited to £1 per member of the charity. The address of the registered office is given on the back cover of these financial statements. The nature of the charity's operations and principal activities are progressing early stage science from academic research towards clinical benefit, working with industry and academia to accelerate the delivery of diagnostic tests to patients and providing intellectual property (IP) management and commercialisation services to medical research charities and organisations.

The charity constitutes a public benefit entity as defined by FRS 102. The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice (SORP) applicable to charities preparing their accounts in accordance with the financial reporting standard applicable in the United Kingdom and Republic of Ireland (FRS 102), the Charities Act 2011, the Companies Act 2006 and UK generally accepted practice as it applies from 1 January 2019.

The financial statements are prepared on a going concern basis under the historical cost convention. The financial statements are prepared in sterling, which is the functional currency of the charity, and rounded to the nearest £000.

The subsidiary undertaking LifeArc Innovations Limited has been excluded from consolidation on the basis of it not being material, in line with FRS 102 paragraph 9.9A

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

Going concern
The Trustees consider that the use of the going concern basis is appropriate because there are no material uncertainties relating to events or conditions that may cast significant doubt about the ability of the charity to continue as a going concern, and there is reasonable expectation that the charity has adequate reserves to continue in operational existence for the foreseeable future. The impact of COVID-19 has been considered when reviewing budgets and long-term plans, and is also not considered to impact the ability of the charity to continue as a going concern.

Incoming resources
Income is recognised when the Charity is entitled to the income, the value can be reasonably measured and it is probable that the income will be received. Incoming resources from charitable activities comprise the following:

- Research contract and development income recognised according to the terms of the contract upon completion of agreed milestones, and royalty income recognised on an accruals basis.
- IP Management and Technology transfer services fees receivable from the Medical Research Council (MRC) and Dementia Research Institute (DRI) which are invoiced in line with the service level agreement.
- Grant income recognised when LifeArc has the right to receive the money. Grants received which are restricted by the donor for performance in future accounting periods are deferred.

Incoming resources from investments comprise the following:

- Investment income together with recoverable tax, recognised on a receivable basis.

Resources expended
All expenditure is accounted for on an accruals basis and has been classified under headings that aggregate all costs related to the category. Where costs cannot be directly attributed to particular headings, they have been allocated to activities on a basis consistent with the use of resources.

- Costs of raising funds are the costs of managing investments for both income generation and capital maintenance and include investment manager fees and investment consultancy fees relating to the costs of the external management of investments of LifeArc.
- Charitable activities comprise expenditure on the direct charitable activities of LifeArc.

Fund accounting
The unrestricted fund is a general unrestricted fund which is available for use at the discretion of the Trustees in furtherance of the general objectives of LifeArc and which has not been designated for other purposes.

Designated funds are amounts set aside by the Trustees for specific purposes.

The restricted funds represent grants received in the year which are subject to specific restrictions imposed by the donor.

Support cost allocation
Support costs are those that assist the work of the charity but do not directly represent charitable activities and constitute corporate resource and governance costs. They are incurred directly in support of expenditure on the activities of the charity and have been allocated to activities on an employee headcount basis.

Accounting for tangible fixed assets
Fixed assets or groups of fixed assets with a cost in excess of £5,000 are capitalised at cost and depreciated according to the disclosed policy.

Depreciation of tangible fixed assets
Depreciation is provided on a straight-line basis so as to write off the cost or valuation of tangible fixed assets less estimated residual value over their estimated useful economic lives, which are as follows:

- long leasehold land and buildings – over the period of the lease or useful economic life, whichever is the shorter;
- plant and machinery – 10 years;
- laboratory equipment – 5-10 years;
- furniture, fixtures and fittings and office equipment – 5 years;
- computers – 3-5 years;
- leasehold improvements – over the period of the lease or useful economic life, whichever is the shorter; and
- IT infrastructure – 10 years

Accounting policies
continued

Accounting for intangible fixed assets
Intangible assets are capitalised at cost and amortised according to the policy below.

Amortisation of intangible fixed assets
Amortisation is provided on a reducing-balance basis or straight-line basis with the most appropriate basis for each asset chosen so as to write off the cost of intangible fixed assets less estimated residual value over their estimated useful economic lives, which are as follows:

- licences – over the period of the licence or useful economic life, whichever is the shorter
- antibody platforms – 20% reducing balance basis

Fixed asset investments
Investments are recorded at cost and are stated at fair value at the balance sheet date. The unrealised gains and losses arising as a result are included in the Statement of Financial Activities (SOFA) together with any realised gains and losses on any investments disposed of in the year.

Financial assets, including investments in equity instruments which are not subsidiaries, are initially measured at fair value, which is normally the transaction price. Such assets are subsequently carried, where possible, at fair value and the changes in value are recognised in the SOFA. Assets are considered for indications of impairment, with any impairment then recognised in the SOFA.

Impairment reviews
A review of the impairment of fixed asset investments is carried out if events or changes in circumstances indicate that the carrying amount will not be recoverable.

Current asset investments
Investments are stated at market value at the balance sheet date. The unrealised gains and losses arising as a result are included in the SOFA together with any realised gains and losses on any disposals in the year.

Operating leases
Rentals paid under operating leases are charged to the SOFA on a straight-line basis over the terms of the lease. Where there is a rent-free period the total cost of the lease is recognised over the term on a straight-line basis.

Foreign currencies
Monetary assets and liabilities in foreign currencies are translated into sterling at the rate of exchange ruling at the balance sheet date.

Transactions which have been concluded prior to the balance sheet date are translated into sterling at the monthly rate of exchange ruling at the date of the transaction. Exchange gains and losses arising in the normal course of operations are included in the SOFA.

Employee benefits
When employees have rendered service to the charity, short-term employee benefits to which the employees are entitled are recognised at the undiscounted amount expected to be paid in exchange for that service.

Pension costs
The charitable company operates a defined contributions pension scheme which is open to all employees. The funds of the scheme are administered by a third party and are separate from the charitable company. The pension charge represents contributions payable by the charitable company for the year. The charitable company's liability is limited to the amount of the contributions.

Termination benefits
Redundancy and termination costs are recognised when there is a legal or constructive obligation which can be measured reliably, and it is probable that a payment will be made.

Material items
Material items are items which derive from events or transactions that fall within the ordinary activities of the charitable company and which individually need to be disclosed by virtue of their size or incidence if the financial statements are to give a true and fair view. The separate reporting of material items helps to provide a better indication of the charitable company's underlying business performance.

Taxation
LifeArc is a registered charity and is generally exempt from corporation tax but not from value added tax (VAT). Irrecoverable VAT is included with the cost of those items to which it relates.

Provisions
A provision is made for a liability in the financial statements where LifeArc has a present obligation as a result of a past event, it is probable that a transfer of economic benefits will be required to settle the liability and a reliable estimate can be made of the obligation.

Notes to the financial statements

For the year ended 31 December 2021

1. Income from charitable activities

	Dec 2021 £000s	Dec 2020 £000s
Research contracts and royalty income	709	1,509
IP management and technology transfer services	1,261	1,200
Grants	373	415
	2,343	3,124

2. Income from investments

	Dec 2021 £000s	Dec 2020 £000s
Dividends – equities	2,226	2,454
Interest – fixed interest securities	12,527	3,360
Interest – deposits	4	190
Income from alternative investments	691	–
	15,448	6,004

3. Other income

	Dec 2021 £000s	Dec 2020 £000s
Miscellaneous	86	20
	86	20

4. Raising funds

	Dec 2021 £000s	Dec 2020 £000s
Investment office costs	300	516
Investment manager fees	1,611	1,422
	1,911	1,938

Notes to the financial statements
continued

5. Analysis of expenditure on charitable activities

	Activities undertaken directly £000s	Support costs £000s	Dec 2021 £000s	Dec 2020 £000s
Translational science	21,699	13,842	35,541	30,653
Translational advice and grant funding	14,442	2,873	17,315	15,516
Early Ventures	985	758	1,743	1,552
	37,126	17,473	54,599	47,721

LifeArc has updated how we summarise our charitable activities to be more representative of the way LifeArc delivers our activities. Support costs are then allocated across charitable activities based on FTE.

LifeArc has awarded grants to the following institutions during the year:

Institution	£' 000
Genomics England Ltd	5,000
Medical Research Council (UKRI)	1,182
University College London	1,096
Francis Crick Institute	1,067
Ashford & St Peter's Hospitals NHS Foundation Trust	754
University Health Network	500
Chelsea & Westminster Hospital NHS	479
University Of Oxford	352
University of Edinburgh	260
University of Cambridge	259
Action Medical Research	205
Great Ormond Street Hospital	187
University of Glasgow	184
University of Sheffield	156
Queen Mary University of London	121
PostEra Inc	100
University Hospitals Coventry and Warwickshire NHS Trust	81
Kings College London	52
AUTM Foundation	46
University of Dundee	40
Royal Holloway University of London	20

6. Allocation of support costs

	Governance £000s	Corporate resources £000s	Dec 2021 £000s	Dec 2020 £000s
Translational science	571	13,271	13,842	10,638
Translational advice and grant funding	118	2,755	2,873	2,208
Early Ventures	32	726	758	603
	721	16,752	17,473	13,449

Governance costs are detailed further in note 7.

7. Governance costs

	Dec 2021 £000s	Dec 2020 £000s
Staff costs	332	290
Direct costs		
Other legal and professional charges	33	45
Audit fees	36	35
Other fees	70	84
Bank charges	9	6
Insurance	156	131
Other governance costs	85	44
	721	635

8. Net income for the year

Net income is stated after charging/(crediting):

	Dec 2021 £000s	Dec 2020 £000s
Depreciation of tangible fixed assets	2,792	2,813
Amortisation of intangible fixed assets	2,827	30
Operating leases – property	1,337	1,175
Auditor's remuneration	36	35
Fees payable to internal auditor	70	82
Net losses/(gains) on foreign exchange	(556)	614

Notes to the financial statements
continued

9. Auditor's remuneration

	Dec 2021 £000s	Dec 2020 £000s
Fees payable to the charity's auditor for the audit of the charity's annual accounts	36	35
Fees payable to the charity's auditor for other services:		
Other services	5	14
	41	49

10. Trustees' and key management personnel remuneration and expenses

Having obtained approval from the Charity Commission, on 14 November 2019 Melanie Lee (Chief Executive Officer) and Andrew Mercieca (Chief Financial Officer) were appointed as Trustees of the charity. From 14 November 2019 remuneration and benefits were paid to these two individuals for their roles as employees of the charity, not for their positions as Trustees. The aggregate amounts paid during the year to Melanie Lee consisted of: Remuneration £408,900 including basic pay £282,000 (2020 – £280,250), 5% flex allowance of £14,100 (2020 – £14,013) and bonus of £112,800 (2020 – £101,520); Pension contributions £28,200 (2020 – £28,025); Other benefits £3,191 (2020 – £2,235). The aggregate amounts paid during the year to Andrew Mercieca who left the organisation at the end of December 2021 consisted of: Remuneration £222,154 including basic pay £160,000 (2020 – £159,000), outstanding holiday pay of £6,154 (2020 – £Nil), 5% flex allowance of £8,000 (2020 – £7,950) and bonus of £48,000 (2020 – £36,000); Pension contributions £18,400 (2020 – £18,200); Other benefits £183,420 (2020 – £1,661). Employer NI was also included in the aggregate amounts disclosed in the 2020 accounts.

All other Trustees neither received nor waived any remuneration during the year (December 2020 – £Nil).

The total amount of employee benefits received by key management personnel during the year (made up of basic pay, bonus, pension allowance, employer's pension contribution, employer's NI, and other benefits) was £2,864k (12 months to December 2020 – £2,093k). The Trustees consider its key management personnel to comprise the Chief Executive Officer and Executive Management Team.

The following Trustees' expenses were reimbursed or paid directly on their behalf during the year for their services as Trustees:

	2021 No. Trustees	2020 No. Trustees	2021 £000s	2020 £000s
Travel and subsistence	3	3	1	1
	3	3	1	1

Included above is £Nil (2020 – £Nil) which has been paid directly to third parties.

11. Staff costs and employee benefits

The average number of employees, analysed by function, was:

	Dec 2021	Dec 2020
Executive	8	8
Translational science	108	106
Translational advice	20	19
Early Ventures	5	6
Scientific enablers	25	20
Enabling functions	54	49
Agency/contract staff	9	7
	229	215

Scientific enablers includes Business development, Diligence, and Project management.

The total staff costs and employee benefits were as follows:

	Dec 2021 £000s	Dec 2020 £000s
Wages and salaries	15,391	13,406
Social security	1,683	1,466
Defined contribution pension costs	1,284	1,110
Agency/contract staff	1,347	563
	19,705	16,545

The number of employees who received total employee benefits (made up of basic pay, bonus, and other allowances) of more than £60,000 is as follows:

	Dec 2021	Dec 2020
£60,001 – £70,000	12	13
£70,001 – £80,000	16	13
£80,001 – £90,000	11	13
£90,001 – £100,000	9	7
£100,001 – £110,000	4	1
£110,001 – £120,000	2	10
£120,001 – £130,000	7	1
£130,001 – £140,000	–	2
£140,001 – £150,000	2	1
£150,001 – £160,000	2	–
£160,001 – £170,000	–	1
£170,001 – £180,000	–	1
£180,001 – £190,000	–	1
£190,001 – £200,000	1	1
£200,001 – £210,000	2	3
£210,001 – £220,000	1	–
£250,001 – £260,000	1	–
£280,001 – £290,000	1	–
£300,001 – £310,000	1	–
£420,001 – £430,000	–	1
£430,001 – £440,000	1	–
	73	69

The pension contributions to the defined contribution scheme payable on behalf of 73 (December 2020 – 69) members of staff amounted to £623,316 (2020 – £548,314).

The redundancy and termination payments in the year totalled £658,920 (2020 – £54,600), of which £529,377 (2020 – £54,600) had been paid during the year with £129,584 accrued at the year end (2020 – £Nil).

Notes to the financial statements
continued

12. Tangible fixed assets

	Assets under construction £000s	Leasehold improvements £000s	Laboratory equipment and plant £000s	Fixtures, fittings and computers £000s	Total £000s
COST					
At 1 January 2021	154	9,808	11,440	2,992	24,394
Additions	419	40	686	218	1,363
Disposals	–	–	(1,084)	–	(1,084)
At 31 December 2021	573	9,848	11,042	3,210	24,673
ACCUMULATED DEPRECIATION					
At 1 January 2021	–	3,528	6,804	1,828	12,160
Charge for year	–	912	1,383	497	2,792
Disposals	–	–	(1,076)	–	(1,076)
At 31 December 2021	–	4,440	7,111	2,325	13,876
NET BOOK VALUE					
At 31 December 2021	573	5,408	3,931	885	10,797
At 31 December 2020	154	6,280	4,636	1,164	12,234

LifeArc had capital commitments of £Nil at 31 December 2021 (December 2020 – £390k).

13. Intangible assets

	Synergy antibody platform £000s	Licences £000s	Assets under construction £000s	Total £000s
COST				
At 1 January 2021	–	447	16,097	16,544
Additions	52	151	–	203
Reclassification	16,097		(16,097)	–
At 31 December 2021	16,149	598	–	16,747
ACCUMULATED DEPRECIATION				
At 1 January 2021	–	30	–	30
Charge for year	2,706	121	–	2,827
Reclassification				
At 31 December 2021	2,706	151	–	2,857
NET BOOK VALUE				
At 31 December 2021	13,443	447	–	13,890
At 31 December 2020	–	417	16,097	16,514

Intangible asset under construction related to LifeArc's licence of Kymab's Intelliselect transgenic mouse antibody platform (Synergy), which was brought into use in 2021.

14. Fixed asset investments

	Dec 2021 £000s	Dec 2020 £000s
Investments at cost	54	54
Unlisted investments held at fair value	19,679	18,591
Listed investments	1,100,377	419,966
Cash held for investment purposes	8,968	5,851
	1,129,078	444,462

Included within investments at cost is £10k in relation to 100% of the shares in LifeArc Innovations Limited.

Listed investments includes investments held by LifeArc where there is an available market for the investments to be bought and sold.

Notes to the financial statements
continued

14. Fixed asset investments (continued)

Unlisted investments held at fair value

	Early Ventures £000s	Eliem Therapeutics £000s	Total £000s
Fair value at 1 January 2021	10,974	7,617	18,591
Investments in the year	7,685	1,441	9,126
Unrealised (loss)/gain during the year	681	18,044	18,725
Reclassification to fixed asset listed investment	–	(27,270)	(27,270)
Interest accrued on convertible debt	339	–	339
Foreign exchange losses	–	168	168
Fair value at 31 December 2021	19,679	–	19,679

Eliem Therapeutics Inc. was listed in 2021 (NASDAQ) and has been transferred to current asset investments as it is expected to be disposed of in the next 12 months.

At the year end the charity was committed to investing £26.9m through its Early Venture Fund, and £13.8m from other unrestricted funds.

Listed investments

	Dec 2021 £000s	Dec 2020 £000s
Market value at 1 January	419,966	138,899
Acquisitions	703,430	286,106
Sale proceeds	(163,776)	(37,806)
Unrealised gain	83,548	32,258
Realised gain	31,380	576
Reclassification from fixed asset unlisted investments	27,270	–
Reclassification from current asset investments	9,282	–
Reclassification to current asset investments	(11,314)	–
Foreign exchange gains / (losses)	591	(67)
Market value at 31 December	1,100,377	419,966
Historical cost at 31 December	1,023,492	375,101

Portfolio analysis

		Dec 2021 £000s	Dec 2020 £000s
Equities	within the UK	–	27,622
	overseas	803,362	348,310
Fixed interest securities	within the UK	–	21,606
	overseas	195,865	2,859
Alternative investment		101,150	19,569
		1,100,377	419,966
Cash		8,968	5,851
		1,109,345	425,817

As at 28 February 2022 the value of our investments had fallen by £62m since year end.

15. Current asset investments

	Dec 2021 £000s	Dec 2020 £000s
At 1 January	739,380	968,252
Net (withdrawals)/investment	(739,539)	(256,500)
Acquisitions	1,150,079	1,999,651
Sale proceeds	(989,294)	(1,999,536)
Realised (losses) / gains	(39)	1,846
Unrealised gains	–	95
Interest received	659	1,036
Reclassified from fixed asset investments	2,032	24,914
Foreign exchange (loss)/gain	(218)	–
Management fees	(78)	(378)
As at 31 December	162,982	739,380
Historical cost at 31 December	159,305	721,494

Notes to the financial statements
continued

15. Current asset investments (continued)

Portfolio analysis

	Dec 2021 £000s	Dec 2020 £000s
Equities overseas	11,314	–
Fixed interest securities within the UK	–	704,450
Fixed interest securities overseas	151,668	10,016
Alternative investment	–	24,914
	162,982	739,380
Cash	2	1,030
	162,984	740,410

The fair value of listed investments is determined by reference to the quoted price for identical assets in an active market at the balance sheet date.

LifeArc held an investment in Kymab ($30m USD of convertible preference shares plus interest receivable). Kymab was acquired by Sanofi in April 2021, which resulted in the repayment of LifeArc's investment recorded as an alternative investment In 2020.

16. Debtors

	Dec 2021 £000s	Dec 2020 £000s
Trade debtors	–	159
Prepayments and accrued income	1,801	1,772
Tax debtor – VAT	835	556
Other debtors	128	66
	2,764	2,553

17. Creditors: amounts falling due within one year

	Dec 2021 £000s	Dec 2020 £000s
Trade creditors	1,228	1,359
Grant creditors	734	–
Accruals and deferred income	6,233	6,327
Other creditors	652	799
PAYE & NI creditor	712	571
	9,559	9,056

18. Leases

	Dec 2021 £000s	Dec 2020 £000s
Operating leases – lessee		
Total future minimum lease payments under non-cancellable operating leases are as follows:		
Not later than one year	1,404	1,371
Later than one and not later than five years	3,487	3,805
Later than five years	–	78
	4,891	5,254

19. Provisions for liabilities and charges

	Provision for dilapidations £000s	Total £000s
At 31 December 2020	735	735
Additions during the year	–	–
Amounts charged against the provision	–	–
Unused amounts reversed	–	–
At 31 December 2021	735	735

The provision relates to dilapidations for the Edinburgh site, the Lynton House site, and the Stevenage site.

20. Grant commitments

At 31 December 2021 LifeArc had made multi-year funding commitments as follows:

	Expected to be paid within 1 year £000	Expected to be paid after 1 year £000	Total £000
Philanthropic Fund	4,212	4,251	8,463
COVID Fund	2,873	702	3,575
Advanced Therapy Innovation Hubs	2,600	3,844	6,444
Crick Fund	553	409	962
MND Fund	468	1,031	1,499
	10,706	10,237	20,943

Notes to the financial statements
continued

21. Fund reconciliation

	Balance at 1 Jan 2021 £000s	Income £000s	Expenditure £000s	Transfers £000s	Gains/ (losses) £000s	Balance at 31 Dec 2021 £000s
Unrestricted	1,165,127	17,172	(44,416)	(197,000)	132,995	1,073,878
Early Venture Fund	23,282	332	–	192,000	619	216,233
Philanthropic Fund	7,800	–	(1,411)	5,000	–	11,389
Crick Fund	4,702	–	(387)	–	–	4,315
COVID Fund	18,030	–	(9,923)	–	–	8,107
Total designated funds	**53,814**	**332**	**(11,721)**	**197,000**	**619**	**240,044**
Total unrestricted	**1,218,941**	**17,504**	**(56,137)**	**–**	**133,614**	**1,313,922**
Restricted	–	373	(373)	–	–	–
	1,218,941	**17,877**	**(56,510)**	**–**	**133,614**	**1,313,922**

	Balance at 1 Jan 2020 £000s	Income £000s	Expenditure £000s	Transfers £000s	Gains/ (losses) £000s	Balance at 31 Dec 2020 £000s
Unrestricted	1,166,381	8,675	(38,507)	(27,000)	55,578	1,165,127
Early Venture Fund	24,000	58	–	–	(776)	23,282
Philanthropic Fund	9,394	–	(1,594)	–	–	7,800
Crick Fund	4,875	–	(173)	–	–	4,702
COVID Fund	–	–	(8,970)	27,000	–	18,030
Total designated funds	**38,269**	**58**	**(10,737)**	**27,000**	**(776)**	**53,814**
Total unrestricted	**1,204,650**	**8,733**	**(49,244)**	**–**	**54,802**	**1,218,941**
Restricted	–	415	(415)	–	–	–
	1,204,650	**9,148**	**(49,659)**	**–**	**54,802**	**1,218,941**

Early Venture Fund

	2021 £000s	2021 £000s
Gross designated fund		25,000
Additions		192,000
Gross accumulated transfers from unrestricted funds		**217,000**
Investment write up / (impairments) at 1 January	(1,776)	
Investment write up / (impairments) during the year	619	
Total investment write up / (impairments) to 31 December 2021		(1,157)
Investment income at 1 January	58	
Investment income during the year	332	
Total investment income to 31 December 2021		390
Total funds available for investment		216,233
Total investments made to 31 December 2021		19,627
Funds available for further investment		196,606

The Early Venture Fund was created to make direct and indirect investments in early stage companies.

Other designated funds

	COVID Fund £000s	Philanthropic Fund £000s	Crick Fund £000s
Gross accumulated transfers from unrestricted funds	27,000	15,000	5,000
Awards provided to 31 December 2020	8,970	2,200	298
Awards provided during the year	9,923	1,411	387
Total awards provided to 31 December 2021	18,893	3,611	685
Funds available for further awards	8,107	11,389	4,315

Fund descriptions

a) **Unrestricted funds** – The unrestricted fund is a general unrestricted fund which is available for use at the discretion of the Trustees in furtherance of the general objectives of LifeArc and which has not been designated for other purposes.

b) **Restricted funds** – The restricted funds are grants received in the year which are subject to specific restrictions imposed by the donor. Grant income includes £373k (December 2020 – £415k) from GSK Services and the Royal Commission for the Exhibition of 1851.

c) **Designated funds** –The designated funds were specifically allocated for the COVID Fund (£27m), Early Venture Fund (£217m), Philanthropic Fund (£15m), and Crick Fund (£5m). The Philanthropic Fund is anticipated to increase by £5m each year.

Notes to the financial statements
continued

22. Analysis of net assets between funds

	Unrestricted funds £000s	Designated funds £000s	Total Dec 2021 £000s
Fixed assets	937,532	216,233	1,153,765
Cash and current investments	143,142	24,545	167,687
Other current assets/liabilities	(6,061)	(734)	(6,795)
Provisions	(735)	–	(735)
	1,073,878	240,044	1,313,922

	Unrestricted funds £000s	Designated funds £000s	Total Dec 2020 £000s
Fixed assets	449,918	23,282	473,200
Cash and current investments	722,448	30,532	752,980
Other current assets/liabilities	(6,504)	–	(6,504)
Provisions	(735)	–	(735)
	1,165,127	53,814	1,218,941

23. Reconciliation of net income to net cash flow from operating activities

	Dec 2021 £000s	Dec 2020 £000s
Net income for year	94,981	14,291
Dividends, interest and rents from investments	(15,448)	(6,004)
Movement in deferred income on Early Ventures investments	(339)	–
Revaluation (gain)/loss on investments	(760)	597
Depreciation and impairment of tangible fixed assets	2,792	2,783
Amortisation of intangible fixed assets	2,827	30
(Gains) on investments	(133,653)	(52,861)
Loss on disposal of tangible fixed assets	8	93
(Increase)/Decrease in debtors	(211)	19,304
Increase/(Decrease) in creditors	503	(3,849)
Net cash flow from operating activities	(49,300)	(25,616)

24. Pensions and other post-retirement benefits

Defined contribution pension plans
The charity operates a defined contribution pension plan for its employees.

The amount of contributions recognised as an expense during the year was £1,284k (12 months to December 2020 – £1,109k).

25. Related party transactions

The members of the Board received no remuneration from LifeArc for their services as Trustees during the year.

Reimbursements for travel expenses with an aggregate value of £606 (December 2020 – £1,088) were made to three members (December 2020 – three members). These transactions were carried out on normal commercial terms.

Trustee indemnity insurance was purchased in the year at a cost of £21,882 including insurance premium tax (2020 – £24,640).

Information about related party transactions and outstanding balances is outlined below:

	Income £000s	Expenditure £000s	Creditor £000s
Medicine Discovery Catapult			
At end date 31 December 2021	–	389	–
Dementia Research Institute			
At end date 31 December 2021	61	–	–
At end date 31 December 2020	14	–	–
Sanofi S.A (Kymab Ltd)			
At end date 31 December 2021	–	19	–
Association of Medical Research Charities			
At end date 31 December 2021	–	68	–
At end date 31 December 2020	–	9	–
RQ Biotechnology Limited			
At end date 31 December 2021	85	–	–

26. Post balance sheet events

Since year end LifeArc has decided to write down an Early Venture investment by £1.7m to £Nil, due to lack of scientific progress and fundraising challenges.

27. Limited liability

LifeArc is a company limited by guarantee (Company number 02698321) and thus has no share capital.

In the event of LifeArc being wound up, every member of LifeArc undertakes to contribute no more than £1 to the assets of LifeArc while they are a member, or within one year after they cease to be a member, for the debts and liabilities of LifeArc contracted before they cease to be a member. The number of members at 31 December 2021 was 13 (31 December 2020 – 13).

28. Charitable status

LifeArc is a charity registered with the Charity Commissioners for England and Wales, number 1015243 and a charity registered in Scotland (number SC037861) with the Office of the Scottish Charity Regulator.

Notes to the financial statements
continued

29. Trading subsidiary

LifeArc holds 100% of the shares in LifeArc Innovations Limited. Consolidated accounts have not been prepared as its inclusion is not material for the purpose of giving a true and fair view.

30. Ultimate controlling party

The charitable company is controlled by its members.

31. Comparative statement of financial activities

	Notes	Unrestricted funds £000s	Restricted £000s	Total funds Dec 2020 £000s
Income and endowments from:				
Charitable activities	1	2,709	415	3,124
Trading activities		–	–	–
Investments	2	6,004	–	6,004
Other income	3	20	–	20
Total income and endowments		8,733	415	9,148
Expenditure on:				
Raising funds	4	1,938	–	1,938
Charitable activities	4	47,306	415	47,721
Provisions	19	–	–	–
Total expenditure		49,244	415	49,659
Net gains on investments	14/15	54,802	–	54,802
Net income		14,291	–	14,291
Net movement in funds	21	14,291	–	14,291
Reconciliation of funds:				
Total funds brought forward	21	1,204,650	–	1,204,560
Cash flow hedge reserve	21	–	–	–
Total funds carried forward	**21**	1,218,941	–	1,218,941

Notes

Notes

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Company number
LifeArc is a company limited by guarantee no. 2698321 incorporated in England and Wales.

Charity numbers
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