


# ANNUAL REPORT AND FINANCIAL STATEMENTS

for the year ended 31 December

# 2019



*Nurturing the future leaders  
in biomedical research*



The Institute was founded in 1891 and for the next 85 years played a vital role in the development of the laboratory aspects of preventive medicine as an independent research institute in the UK.

Financial pressures in the 1970s led to the closure of the research and production facilities and the conversion of the Lister Institute into a highly successful Trust awarding prestigious Research Fellowships from 1982, which in 2003, were revised to become Prize Fellowships. The Fellowships continue to deliver on the Lister Institute's strategic aim of nurturing the future leaders in biomedical research.

# CHAIRMAN'S INTRODUCTION

for the year ended 31 December 2019



Chairman, Professor Sir Alex Markham

## I am pleased to present the Lister Institute of Preventive Medicine's Annual Report for 2019 on behalf of the Governing Body

2019 has been an excellent year for the Lister Institute with a record number of applications (135) and the award of five Lister Prize Fellowships of £250,000. Lister Fellows and former Fellows continue to undertake excellent research, publish high impact papers and gain academic advancement and recognition. Particular congratulations are given to Gurdyal Besra and Anant Parekh for being elected Fellows of the Royal Society, to Madan Babu for being awarded the EMBO Gold Medal and to Yanlan Mao and Tom Baden for being awarded EMBO Young Investigator awards.

We had another excellent Annual meeting at Corpus Christi College in Oxford. As always, the meeting provides the opportunity to gain insight into the high-quality research of those who gave presentations but also the opportunity for Fellows and Members to speak informally about science and careers. We know from speaking to the current Fellows how much they value the opportunity to mix with their senior colleagues and discuss their research and the general challenges of academia.

I would like to pay tribute to Professor John Iredale and all the members of the Scientific Advisory Committee ("SAC"). It is eminently clear that they are doing

an excellent job in selecting the very best individuals for the award of the Lister Prizes. As the number of applications continues to increase every year it is very apparent that this is becoming an increasingly demanding role! I must also thank my colleagues on the Governing Body for all their hard work and support. The strength of the Institute is the people associated with it, whether they be members of the Governing Body and its sub-committees, the Membership, our Fellows or the staff, and to all I offer my sincere thanks and warmest appreciation.

2019 has been a year of great change behind the scenes of the Lister Institute with all three core members of staff retiring and being replaced. I would like to thank Kate Law (Director); Jacky Wilson (Accountant) and Naomi King (Office Manager and Administrator) for their excellent and dedicated hard work for the Lister Institute over many years. In Naomi's case – 20 years! Naomi will continue to support her successor on a part time basis over 2020 and will still be around. I would also like to thank Kate for orchestrating an excellent recruitment process and hand over to the new team who are Dr Sally Burtles (Director); Sue Andrews (Accountant) and Nicola King (Office Manager and Administrator). Welcome to them all!

Despite being a year of considerable financial volatility with the conflicting forces of a strong underlying economic situation and significant disruptive geopolitical tensions, 2019 was a good year. Our investments had a final valuation (after withdrawal of funds for the Prize Fellowships and Lister operations) of £43.2m, up from £40.8m in 2018.

Sadly, Mr Just who designed and printed our Annual Report and Accounts for over 45 years died this year. We are therefore using a new designer and have introduced a more contemporary format to the annual report to focus more on the Fellows and the science they undertake. I hope you enjoy the new format and we would welcome any feedback.

As ever, one of the highlights of the year for me has been listening to the Prize Fellows giving seminars in their own departments, hearing how the award has helped them develop their research groups and talking to other members of their departments about the research

environment and any funding issues. To all of those Fellows and their host institutions, I would like to express our thanks for their hospitality and the ongoing support of the Fellows.

Researchers operate in a very challenging funding environment, often with tight restrictions on how any funding secured can be used. The Lister Prize of £250,000 provides a fantastic opportunity for researchers to use the funds as they wish to have the greatest impact on their research and their careers. It is very clear to me that through this funding and the support of the network of Lister Fellows and former Fellows, the Lister Institute is very successfully fulfilling its stated aim of 'nurturing the future leaders in biomedical research'.

The Lister Institute is of course not immune from the impact of the Covid-19 pandemic. We believe however that we have the administrative and financial arrangements in place to enable the Institute to continue its programme of Prize Fellowships and other activities at the current level for the foreseeable future. The Institute has not had its own offices for many years and so its staff are well used to working from home.

The Governing Body now meets by videoconference as will the Finance and Investment Committee (FIC), enabling it to continue face-to-face meetings with its financial advisors. Plans are also in place for the SAC to use videoconferencing so that it can carry on uninterrupted its programme of reviewing prize applications, long and short-listing and interviewing applicants and making recommendations.

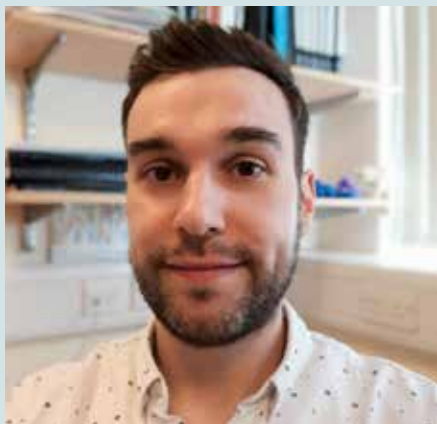
We also have adequate and secure finances enabling us to maintain our activities at their current level. The Institute has substantial reserves of which more than £5m is held in cash in a Liquidity Fund, set up four years ago to ensure that in such circumstances as we now face, cash would be readily available at a time when markets are depressed. We are proposing to finance the 2020 year's activities from this liquidity fund.



Alex Markham, Chairman

# 2019 LISTER RESEARCH PRIZE FELLOWSHIP WINNERS:

*The five young researchers to whom we awarded the Lister Prize Fellowships were as follows:*



**Dr Timothy Blower, Durham University**

*BREX and phage-bacteria interactions*

Based at Durham University, Dr Timothy Blower studies bacteriophages (known as phages) - viruses that attack bacterial cells and can be used as an alternative to antibiotics. Phages are the most common entities in the biosphere and it has been estimated there may be ten times as many phages as bacterial cells on Earth. Dr Blower's team researches phage-resistance; the ability of bacteria to guard against phage attacks. In particular his lab focuses on how to mitigate the phage-resistance mechanism Bacteriophage Exclusion (BREX); research which could enable new therapies for antibiotic-resistant bacteria and provide valuable biotechnological tools.



**Dr Ross Chapman, University of Oxford**

*DNA double-strand break repair mechanisms in immunity and oncogenesis*

Dr Ross Chapman, of the University of Oxford, studies DNA double-strand breaks (DSBs) – damage where both strands of DNA are cut, which blocks DNA from replicating. Such lesions can be caused by disease or treatments such as chemotherapy, or radiotherapy or as a result of normal cellular processes. DSBs that are not repaired properly can be toxic or even lethal to a cell and can result in serious complications, including cancer. Dr Chapman's team are improving our understanding of how DSBs can be repaired as well as how they may be used to help treat cancer. The team also studies other chromosomal instabilities to help identify additional cellular defects that could also be exploited to selectively kill cancer cells.

*Note: The academic rank of each Prize winner is shown as at the date of the award.*

*Image: Dr Ross Chapman, photograph by Fisher Studios*



**Dr Joanne Konkell, University of Manchester**

*Atypical monocytes at the oral mucosa; revisiting myeloid cell development and function at a unique barrier site*

Dr Joanne Konkell of the University of Manchester studies how our immune system works in the mouth, more specifically, at a site known as the gingiva – the gums. Her team aims to improve our understanding of how immune responses are appropriately controlled at this unique barrier, working to identify new therapies for periodontitis (gum disease) – which is caused by aberrant immune activity in the gingiva. Periodontitis is the most common inflammatory condition in humans and, as well as affecting our dental health, has been linked to issues such as cardiovascular disease and rheumatoid arthritis.



**Dr Michelle Linterman, The Babraham Institute**

*Tertiary lymphoid structures in health and disease*

Dr Michelle Linterman of the Babraham Institute researches inflammation in the body, with a view to informing future therapies for inflammatory conditions. In particular Dr Linterman's team studies how inflamed areas in one part of the body can change adjacent tissues so that they send immune cells to the affected site. One of the categories of immune cells that are sent to these areas is tertiary lymphoid structures (TLSs). A TLS can be formed after an infection or due to immunisation and it can provide long-term immunity from some highly common inflammatory conditions.



**Dr William McEwan, University of Cambridge**

*Protein-level knockdown as a new frontier for biological and biomedical sciences*

Dr William McEwan of the Dementia Research Institute at the University of Cambridge studies the link between proteins in the brain and how they might cause neurodegenerative disease. In patients with conditions such as Alzheimer's and Parkinson's disease, studies have shown that protein molecules in the brain can arrange into long, ordered assemblies. These assemblies are thought to spread disease by gaining access to other cells and forcing them to replicate the structure. Dr McEwan's team is working on new understanding of this process, which it is hoped will inform future treatments to help combat these highly serious and common conditions.

# LISTER PRIZE FELLOWSHIPS AND SUMMER STUDENTSHIPS

The key to the Lister's success is the selection of the highest quality young researchers to whom we award the Lister Prize Fellowships. This is the work of the Scientific Advisory Committee and is at the heart of the Institute's activities. This year we received 135 applications – the highest number yet and a 31% increase on 2018 (103). Through the rigorous review and peer review process (see box), the SAC recommended five candidates to receive a Lister Prize Fellowship. It is important that the awards reflect the diversity of applicants and researchers in general and reassuring to see the geographical spread and gender balance of the Fellows

The task of selecting the Prize Fellows is extremely difficult due to the diverse fields of research, the high standards and the high numbers of applications. It is a tribute to SAC members and their chairman that each year they identify some truly exceptional young researchers. We thank the SAC and their Chairman Professor John Iredale for undertaking this onerous task and doing it so well.

Every year the Institute offers Lister Fellows and Former Fellows the opportunity to host an outstanding undergraduate student in their laboratory for the summer. This gives them the opportunity to experience research in a first rate laboratory and help inform their career choices, while also helping the Fellows with their research. The Summer Studentship Scheme is very popular and was extended to 45 recipients for 2019. In the end only 40 studentships were awarded as 5 dropped out too late in the recruitment process for them to be replaced. The students were also invited to present their results at a poster session during the Annual Meeting and to attend the talks. This constitutes another great opportunity and experience for them.

## Process for SAC selection of Prize Fellows

### Applications received (100 - 140)

- SAC review and score

### Long-listing based on the scores (30 - 40)

- Long-listed applications are sent for international peer review
- SAC review and score considering the international experts' comments

### Short-listing based on SAC scores (10 - 12)

- Short-listed candidates are interviewed by the SAC
- SAC makes recommendations

### Prize Fellowships awarded (5 - 6)



*Image: Set of six test tubes used by Joseph Lister, United Kingdom.  
Credit: Science Museum, London. (Also on Page 2/3)*



**Images:**

1. **Yanlan Mao** in her Lab at UCL. A 2018 Prize-Winner, Yanlan was awarded one of the EMBO Young Investigator Awards in 2019.
2. **Tom Baden**, a 2018 Lister Institute Prize-winner. In 2019 Tom was awarded one of the EMBO Young Investigator Awards as well as the Nature Research Award for Driving Global Impact.

## FELLOW OF THE ROYAL SOCIETY AND EMBO GOLD MEDAL WINNERS



Image: MRC Laboratory of Molecular Biology

### Dr M. Madan Babu

Dr M. Madan Babu was awarded a Lister Institute research prize in 2014 and is a Programme Leader at the MRC Laboratory of Molecular Biology. His team uses computational approaches to study how molecules inside our cells are regulated. This is important as when regulation goes wrong, numerous human disorders such as cancer and neurodegenerative conditions may develop. Dr Babu is a world-renowned scientist and has won a number of awards including being named the Life Sciences Laureate at the inaugural 2018 Blavatnik Awards for Young Scientists in the United Kingdom and the 2018 International Society for Computational Biology (ISCB) Innovator Award. He is also a recipient of the 2019 EMBO Gold Medal. Dr Babu is an elected member of EMBO and a Fellow of the Royal Society of Chemistry.



### Professor Gurdyal Besra

Professor Gurdyal Besra (1999 Fellow) manages a world-leading multidisciplinary team investigating the chemical characteristics of the cell wall of the tuberculosis (TB) bacterium and was elected as a Fellow of the Royal Society in 2019. Based at the University of Birmingham, Professor Besra's laboratory has contributed to innovative TB drug target identification, therapy and vaccine development for several years by enhancing our understanding of cell wall biochemistry. Professor Besra's research has been recognised in several international awards including the W.H. Pierce Memorial Prize from the Society for Applied Microbiology, the Carbohydrate Chemistry Award from the Royal Society of Chemistry and the Biochemical Society Award.



### Professor Anant Parekh

Professor Anant Parekh (2001 Fellow) of the Centre of Integrative Physiology at the University of Oxford was named as a Fellow of the Royal Society in 2019. His research involves investigating calcium signalling processes within cells, understanding how changes in calcium levels can create different cellular responses and how this can be altered in diseases such as asthma. Professor Parekh is a highly distinguished researcher whose work has won several prestigious awards including the 2002 Wellcome Prize in Physiology, the 2009 India International Foundation Prize and the 2012 GL Brown Prize from the UK Physiological Society. He is also a member of Academia Europaea and is a Fellow of the Academy of Medical Sciences.

# ANNUAL MEETING

In 2019 we had another excellent Annual meeting with 76 attendees at Corpus Christi College in Oxford, an increase of 17% on last year. As well as current and former Fellows the attendees included Governing Body and Scientific Advisory Board members, some of the Lister summer students who presented their projects as posters, our science writer and representatives of our investment advisors.



The meeting followed a similar structure to previous years with a talk by Professor Barry Potter (University of Oxford) on 'Academic Drug discovery: Sulfatase inhibitors from concept to clinical trials and beyond' followed by a poster session on the first day. This was followed by a series of presentations from the newly selected 2019 Lister Prize Fellows (see pages 2 and 3), a current and a former Fellow (Professor Serge Mostowy (London School of Hygiene and Tropical Medicine) and Professor Dino Giussani (University of Cambridge)). The 2019 Special Lister Institute Lecture was given by Professor Patrick Maxwell (University of Cambridge). Professor Maxwell talked about oxygen sensing by cells and its importance in development, physiology and disease.

*The spectrum of topics covered was very broad and the quality of the talks from all speakers was extremely high confirming the continuing excellence of the Lister Prize Winners.*



## Programme

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**Dr Timothy Blower, Durham University**  
*BREX and phage-bacteria interactions*

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**Dr Ross Chapman, University of Oxford**  
*DNA double strand break repair regulation in genome diversification and cancer*

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**Dr Joanne Konkel, University of Manchester**  
*Tailoring Immune responses at the oral barrier*

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**Dr Michelle Linterman, The Babraham Institute**  
*Influenza infection remodels the lung to support ectopic germinal centers*

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**Dr William McEwan, University of Cambridge**  
*Immune control of cytosolic protein aggregation*

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**Dr Serge Mostowy, London School of Hygiene & Tropical Medicine**  
*Use of the cytoskeleton to control Shigella infection*

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**Professor Dino Giussani, University of Cambridge**  
*Heart disease link to fetal hypoxia: An intergenerational perspective*

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**Professor Patrick Maxwell, University of Cambridge**  
*Oxygen sensing and kidney diseases*

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**Images:**

1. (p6) Corpus Christi College, Oxford  
Image © 2019 Corpus Christi College, Oxford.
2. (p7, Top left) Harry Hitchcock and Tom Montagu-Pollock, Cazenove Capital with Sally Burtles, Lister Institute, Director.
3. (p7, Top right) New SAC member – Liz Patton with Serge Mostowy, Current Fellow.
4. (p7, Right) Stephen Perkins, Former Fellow with Colin Roberts, Member.
5. (p7, Middle) 2019 Prize winners with Alex Markham, Chairman of GB, and John Iredale, Chair of SAC.
6. (p7, Left) Jan Rehwinkel, Current Fellow with Naomi King, Lister Institute Administrator and Office Manager with Ian Adams Former Fellow.

# GOVERNANCE OVERVIEW

## The Governing Body

Good governance is core to the Lister Institute. It is overseen by the Governing Body which meets twice a year. There was only one change to the membership of the Governing Body in 2019. No one stepped down and Steve McMahon joined in readiness to take over from Andrew Hutton when he steps down. As ever, we must pay tribute to the quality and dedication of the Governing Body members and the speed and clarity with which they respond to Lister matters.

Sadly, I must inform you of the death in 2019 of Professor Sir Hans Kornberg who was a member of the Governing Body from 1990 to 1995. He was a brilliant scientist who built on the work of Hans Krebs to make key discoveries about metabolic cycles. He was also committed to the wider scientific community and led a succession of educational and scientific bodies where he was able to foster further generations of researchers.



*Sir Peter Ratcliffe, image courtesy of Ludwig Cancer Research*

On a happier note I am delighted to be able to congratulate Sir Peter Ratcliffe (member of Governing Body from 2004 – 2011) on winning the Nobel Prize for Medicine for his discoveries of how cells sense and adapt to oxygen availability.

## Finance and Investment Committee

The Finance and Investment Committee (“FIC”) met twice in 2019 as per schedule. Two long standing members of the FIC – the Chairman and Honorary Treasurer Michael French and investment expert Andrew Hutton are due to stand down in 2020 and 2021 respectively and in anticipation of that, two new members are being appointed to enable overlap. Steve McMahon was appointed in September 2019 and will replace Andrew. Murray Legg has been identified to join the FIC in 2020 and will take over from Michael as its Chairman after the AGM in September. They will attend both meetings in 2020 as observers.

## Scientific Advisory Committee

The SAC is an independent Committee whose members are senior expert researchers. Together they ensure that the SAC has broad expertise over many disciplines. The SAC is responsible for reviewing the applications to the Lister Institute, overseeing the peer review process, interviewing the short-listed candidates and recommending who should be awarded the Prize Fellowships. The Committee meets once a year to interview the short-listed candidates and to recommend who they consider to be the best and therefore the prize winners.

In 2019 two members, Corrine Houart and Ian Adams came to the end of their tenure and two others, Margaret Frame and Josef Vormoor stood down early due to other commitments. They have been replaced by Professor Julian Blow (Dundee), Professor Aroon Hingorani (UCL), Professor Liz Patton (Edinburgh) and Professor Magalena Zernicka-Goetz (Cambridge) who will attend their first meeting in 2020.

## Institute Membership

Four Fellows, who completed five years of their Fellowship in 2019, have been welcomed into Membership of the Institute. They are Dr Melina Schuh, now at Max Planck Institute, Germany, Dr Rob Klose (Oxford), Dr Emmanuel Boucrot, (UCL) and Dr Madan Babu, (Cambridge). We also welcomed Ms Kate Law, Mr Stephen McMahon, Professor Aroon Hingorani (UCL) and Professor Liz Patton (Edinburgh) to join us as Members.

# FINANCIAL OVERVIEW



Michael French, Honorary Treasurer

Despite being a year of considerable volatility with significant disruptive geopolitical tensions, a change in monetary policy outlook from the US Federal Reserve combined with renewed hopes of a US-China trade deal resulted in a strong recovery to markets in the first half of 2019. Equity markets were further buoyed later in the year by the announcement of the 'Phase 1 trade agreement between China and the US. In the UK, domestic stocks benefitted from the continued stimulus from central banks and equity markets continued to rally throughout the year. More volatility is to be anticipated for the foreseeable future with amongst other things, trade tensions, politics and BREXIT all playing a role. At the time of writing the impact on world markets of the Coronavirus is beginning to become evident introducing a hitherto unforeseen risk. For the Institute, the low volatility 'B' Portfolio, which was established to enable the Lister to ride out a major market correction, continues to provide a buffer against this uncertainty and any ensuing fall in the markets.

Our two investment managers have successfully handled our portfolio in 2019 with our investments having a final valuation (after withdrawal of £1.75m for the Prize Fellowships and Lister operations) of £43.2m (up from £40.8m in 2018). This has largely corrected the fall in value from 2018. The FIC will continue to monitor closely our portfolio and there will be careful consideration of the numbers and levels of Fellowships and studentships.

All expenditure has been in line with the agreed 2019 budget. The institute's operational (staff and office) costs remain low at £215k, although as agreed, they have been higher this year (by about £20k) as there has been overlap of Kate Law with the new Director to ensure an effective and smooth hand-over. The investment managers' fees were £245k, up from £215k in 2018. With five Fellowships being awarded at £250,000k each and £90k allocated for studentships, the total expenditure for the Lister institute in 2019 was £1.783m

	£k
Prize Fellowships and studentships	1,330
Investment managers fees	245
Staff and operational costs	208
<b>TOTAL</b>	<b>1,783</b>

As always, the Lister institute is indebted to our Honorary Treasurer, Michael French and all the members of the Finance and Investment Committee and I would like to thank them all for their scrutiny of the Institute's finances (and the rigorous questioning of our current investment advisors, Partners Capital LLP and Cazenove Capital Management).

We are delighted to welcome our new accountant Ms Sue Andrews who joined us in October 2019. Sue is an experienced accountant, having worked in many business sectors in a number of senior management roles. She brings a wealth of experience to the Lister Institute.

**Alex Markham**, Chairman

# CURRENT AND FORMER LISTER PRIZE FELLOWS

<b>Fellow</b>	<b>Title of Research</b>	<b>Awarded</b>
<b>Dr Cynthia Andoniadou</b> King's College London	Regulation of stem cell potential in the mammalian pituitary gland	2016
<b>Dr M Madan Babu</b> MRC Laboratory of Molecular Biology, Cambridge	Dynamics of tRNA abundance and the regulation of protein expression levels	2014
<b>Dr Tom Baden</b> University of Sussex	Anisotropic retinal circuits for processing of colour and space in nature	2018
<b>Dr Nina Balthasar</b> University of Bristol	Identifying the novel CREB coactivator TORC2's role in the hypothalamic pathways controlling energy homeostasis	2007
<b>Dr Oliver Billker</b> Umeå University Sweden	In search of the xanthurenic acid receptor of malaria parasites - a potential target for transmission control	2004
<b>Dr Emmanuel Boucrot</b> University College London	Mechanisms of cargo selection and vesicle formation in a novel pathway of endocytosis	2014
<b>Dr Simon Bullock</b> MRC Laboratory of Molecular Biology, Cambridge	Mechanisms and neuronal functions of motor-driven transport	2008
<b>Professor Nia Bryant</b> University of York	Using yeast as a model system to understand the insulin-dependent trafficking of GLUT4 in adipocytes	2004
<b>Professor Juan Burrone</b> King's College London	The role of neuronal activity during synapse formation	2009
<b>Dr Rebecca Corrigan</b> University of Sheffield	Analysis of the role of (p)ppGpp in staphylococcal infection using zebrafish as a model organism	2018
<b>Dr Vincenzo Costanzo</b> IFOM Italy	The role of ATM and ATR in preventing genomic instability	2006
<b>Professor Victoria Cowling</b> University of Dundee	Regulation and function of the 7-methylguanosine cap	2011
<b>Professor Daniel Davis</b> University of Manchester	Nanotubes and synapses in immune cell communication	2005
<b>Dr Mark Dodding</b> University of Bristol	A new chemical biology approach to target molecular motors for the manipulation of cytoskeleton and organelle dynamics	2018
<b>Professor Simon Draper</b> The Jenner Institute, Oxford	Development of next-generation broadly-neutralising vaccines against the blood stage infection of human malarials	2013

<b>Fellow</b>	<b>Title of Research</b>	<b>Awarded</b>
<b>Professor Michael Eddleston</b> University of Edinburgh	Prevention of deaths from late respiratory failure in organo-phosphorus pesticide poisoning	2011
<b>Professor Sherif El-Khamisy</b> University of Sheffield	The repair of oxidative and topoisomerase induced chromosomal strand breaks and human disease	2013
<b>Professor Rebecca Fitzgerald</b> University of Cambridge	Translational research programme for prevention of oesophageal adenocarcinoma	2008
<b>Dr Agnieszka Gambus</b> University of Birmingham	Identification and characterisation of Mcm7 ubiquitin ligase	2015
<b>Dr Holger Gerhardt</b> VIB Vesalius Research Centre KU, Germany	Endothelial guidance in vascular patterning	2008
<b>Dr Susana Godinho</b> Queen Mary University of London	Regulation of paracrine signalling by centrosome amplification	2016
<b>Professor Fiona Gribble</b> University of Cambridge	Secretion of incretin hormones from the mouse intestine	2006
<b>Dr Sebastian Guettler</b> The Institute of Cancer Research	Structural basis and mechanism of telomere maintenance by poly(ADP-ribose)ation	2017
<b>Professor Muzlifah Haniffa</b> Newcastle University	In vivo kinetics and functional response of human mononuclear phagocytes during acute tissue inflammation	2016
<b>Dr Sophie Helaine</b> Harvard Medical School and Imperial College London	Salmonella Persister formation at the single cell level	2017
<b>Dr Matthew Hepworth</b> University of Manchester	Targeting cell metabolism to regulate innate lymphoid cells in health and disease	2018
<b>Professor Andrew Jackson</b> University of Edinburgh	Cellular pathways determining human brain size	2009
<b>Dr Ragnhildur Karadottir</b> Wellcome Trust – MRC Cambridge Stem Cell Institute	The role of neuronal activity in myelin repair	2015
<b>Professor Josef Kittler</b> University College London	Miro family proteins as regulators of synaptic bioenergetics and a locus for mitochondrial dysfunction in neurological disease	2010
<b>Professor Robert Klose</b> University of Oxford	Biochemical isolation and functional dissection of the CpG island proteome	2011

## CURRENT AND FORMER LISTER PRIZE FELLOWS (CONTINUED)

<b>Fellow</b>	<b>Title of Research</b>	<b>Awarded</b>
<b>Dr David Komander</b> Walter & Eliza Institute of Medical Research, Australia	Bacterial interference with the ubiquitin system	2012
<b>Dr Yogesh Kulathu</b> University of Dundee	Regulation and function of protein FUBylation	2017
<b>Professor Paul Lehner</b> University of Cambridge	The role of HSP70 in MHC Class I mediated antigen presentation in human dendritic cells	2004
<b>Professor David Lyons</b> University of Edinburgh	Elucidating mechanisms of myelinated axon formation, function and repair using zebrafish	2012
<b>Professor Juan Martin-Serrano</b> King's College London	Functional parallels between HIV-1 budding and the last step of cell division	2008
<b>Professor Robin May</b> University of Birmingham	The molecular basis of latency and dissemination during cryptococcosis	2010
<b>Dr Yanlan Mao</b> MRC-Laboratory for Molecular Cell Biology, University College London	Mechanochemical regulation of tissue growth and morphogenesis	2018
<b>Dr Joseph Marsh</b> MRC Human Genetics Unit University of Edinburgh	The dominant-negative effect in protein complexes: implications for human genetic disease	2018
<b>Dr Serge Mostowy</b> London School of Hygiene & Tropical Medicine	Bacterial autophagy and the cytoskeleton in host defence	2015
<b>Dr James Nathan</b> Cambridge Institute for Medical Research	The interplay between metabolism and oxygen sensing	2017
<b>Dr Akhilesh Reddy</b> Perelman School of Medicine, USA	Peroxiredoxins and redox oscillations in the circadian (24 hour) clockwork	2012
<b>Professor Jan Rehwinkel</b> University of Oxford	Z-RNA and Z-DNA: Novel inducers of antiviral immunity	2016
<b>Dr Rahul Roychoudhuri</b> The Babraham Institute	Resolving mechanisms of gene regulation within the immune system using forward genetics	2017
<b>Professor Tatjana Sauka-Spengler</b> Weatherall Institute of Molecular Medicine, Oxford	Decoding gene regulatory circuits controlling multipotency of neural crest	2013

<b>Fellow</b>	<b>Title of Research</b>	<b>Awarded</b>
<b>Dr Melina Schuh</b> Max Planck Institute for Biophysical Chemistry, Germany	Mechanisms of aneuploidy in human oocytes	2014
<b>Dr Amanda Sferruzzi-Perri</b> University of Cambridge	Biomarkers of materno-fetal health: role of placental endocrine mediators in normal and obese pregnancies	2018
<b>Professor Daniel Smith</b> University of Glasgow	Investigating the overlap between hypertension and bipolar disorder to identify new and repurposed medications for bipolar disorder	2016
<b>Professor Kenneth Smith</b> University of Cambridge	Control of infection and autoimmunity by an inhibitory Fc receptor FcγR11b	2007
<b>Professor Grant Stewart</b> University of Birmingham	Investigating the role of the RIDDLE syndrome gene in promoting repair of DNA damage	2009
<b>Dr Anne Straube</b> University of Warwick	Microtubule-actin crosstalk in cell migration	2013
<b>Dr Sarah Teichmann</b> The Wellcome Trust Sanger Inst and EMBL-EBI, Cambridge	Decoding genetic switches in T helper cell differentiation	2010
<b>Professor Tomoyuki Tanaka</b> University of Dundee	Mechanisms of kinetochore-microtubule interaction	2005
<b>Professor Chris Thompson</b> University of Manchester	Identifying and characterising genes that control cell fate choice and social behaviour	2005
<b>Professor Daan van Aalten</b> University of Dundee	Structural mechanisms and specificity of O-GlcNAc signalling in the eukaryotic cell	2006
<b>Dr Fiona Wardle</b> King's College London	Transcriptional control of mesodermal cell differentiation in vertebrates	2007
<b>Dr Erica Watson</b> University of Cambridge	Mechanisms of folate metabolism during the trans-generational inheritance of disease	2015
<b>Professor Steven West</b> University of Exeter	The nature, mechanism and function of RNA polymerase II modifications in health and disease	2015

# REPORT OF THE GOVERNING BODY

## for the year ended 31 December 2019

*The Governing Body presents its Annual Report under the Charities Act 2011 together with the audited Financial Statements of the Charity for the year ended 31 December 2019. The Financial Statements have been prepared in accordance with the accounting policies set out in Note 1 (page 23) to the Financial Statements and comply with the Companies Act 2006, the FRS102 Charities SORP and the documents governing the constitution of the Charity.*

### LEGAL AND ADMINISTRATIVE DETAILS

Legal and administrative information is set out on page 29 of this report.

#### **Members of the Governing Body, Directors and Trustees**

The members of the Governing Body are, for the purposes of company law, Directors of the Institute and, for the purposes of charity law, Trustees of the Institute and throughout this report are collectively referred to as the Trustees.

Details of the Trustees serving throughout the year, unless otherwise stated, are set out on page 29.

### STRUCTURE, GOVERNANCE AND MANAGEMENT

#### **Constitution**

The Institute is registered with the Charity Commission for England and Wales (registration number 206271). It is incorporated and registered in England and Wales under the Companies Act 2006 as a company limited by guarantee and not having a share capital (company number 34479). It is governed by its Articles of Association and has charitable status.

#### **Appointment and Re-appointment of Trustees**

The Trustees are the fourteen members of the Governing Body of whom six are elected by the members at the annual general meeting. A maximum of six further Trustees are appointed by the Governing Body and there are currently five such appointees. One additional member is Lord Iveagh's representative, another is Professor Sir Alec Jeffreys who was appointed to life-membership, and the final member, Professor Douglas Higgs, is the representative of the Royal Society. Trustees, other than the two nominated representatives, Professor Sir Alec Jeffreys and exceptionally those appointed by the Governing Body, generally serve for a maximum of six years and a system of planned rotation is in place. Currently one position is deliberately being kept vacant. When considering appointment or nomination for election as Trustees, the Governing Body has regard to the specialist skills needed.

#### **Induction and Training of Trustees**

New Trustees undergo induction sessions with the Chairman, Treasurer and Director during which they will gain an understanding of the Institute's structure, activities, financial position and future strategies. Prior to appointment they will attend one meeting of the Governing Body as 'observers'. New Trustees will also be made aware of their legal obligations with regard to charity and company law. In addition, new Trustees will be advised of appropriate literature and training courses.

#### **Organisation**

The Institute is governed by its Governing Body which is responsible for setting policies, authorising actions on all significant operational issues and ensuring legality and good practice. The Governing Body meets formally twice a year. The Treasurer and Chairman review the remuneration of all staff once a year. This includes the remuneration of those individuals considered to be key management personnel.

Specific authorities are delegated to two sub-Committees in particular areas. The Scientific Advisory Committee (see page 29 for membership) has responsibility for the selection of the Lister Institute Prize Fellows and the monitoring of their scientific activities, as well as providing scientific and medical advice to the Governing Body as required. In 2015, the peer review processes of the SAC were audited by the Association of Medical Research Charities and found to be meeting the highest standards. The Finance and Investment Committee (see page 29 for membership) has responsibility for interaction with the Institute's investment advisors, ensuring implementation of the Institute's investment policy and monitoring performance. It prepares and submits to the Governing Body the annual budget, and subsequently monitors performance against it. It also advises the Governing Body, as required, on other financial and risk matters.

The routine management of the Institute's activities is undertaken by its Director, aided by the Administrator and the Accountant. All staff work from home.

In the year ending 2019 of the Charity's Trustees, only the chairman of the SAC received any remuneration or any other benefits in relation to their dealings with the Charity. The chair of the SAC receives an honorarium in recognition of the very significant workload associated with the role. They are also a member of the Governing Body.

The Chairman and the Treasurer of the Charity agree the Director's remuneration which, along with other Lister Institute staff, is normally increased in line with RPI. Salaries are also compared to similar organisations and adjusted periodically where appropriate.

#### **Risk Management**

The Trustees assess the risks facing the Institute and review the effectiveness of the controls to monitor and mitigate them.



A Risk Management Register is maintained and formally reviewed annually by the Governing Body.

The key controls used by the Institute include:

- Formal agendas for all Governing Body meetings
- Strategic planning, budgeting and management accounting
- Formal written policies
- Clear authorisation and approval levels
- Regular review of Fellows' scientific reports

The specific risk of bribery associated with any of the Institute's activities has been reviewed, and clear policies and procedures have been developed and communicated to all Trustees, staff and Members.

The specific risk of scientific misconduct by Lister Fellows has been reviewed by the Trustees and, as a result, minor amendments have been made to the risk log.

The Lister website and terms and conditions have been updated in response to the 2018 EU General Data Protection Regulation (GDPR). The Charity has also voluntarily subscribed to membership of the Information Commissioners Office (ICO), the UK's independent authority set up to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals. Membership provides access to information and advice on matters relating to data protection and reassurance for the charity in respect of compliance with the Regulation.

The Institute maintains a 'Register of Interests' for all Governing Body and committee members as well as principal staff and operates a clear "declaration of interests" policy and procedures for all meetings.

The principal risk facing the Institute lies in its ability to maintain and protect the value in real terms of its investments and to generate from them, on a long-term basis, a consistently high overall return. This risk is mitigated by the Institute's appointment of experienced investment managers with a proven track record; by internal controls that allow close and regular monitoring of their performance against benchmarks; by the Institute's requirement of its investment managers to re-tender periodically and competitively for appointment – as happened in 2017; and by regular meetings that formally review investment performance and policy, and include one-to-one presentations by the investment managers.

Investment Policy Statements are in place for the Lister Institute and its investment partners. These are reviewed on an annual basis.

### **Objectives and Activities**

The statutory Object of the Institute is to further the understanding and progress in preventive medicine by promoting excellence in biomedical research in the UK and Ireland.

When founded in 1891, the Institute sought to achieve this objective by establishing a research institute specialising in the area of "infections" and their prevention by immunisation and other means. It complemented these research activities by the production and supply of materials such as vaccines and anti-toxins.

The Institute continued in this mode until the late 1970s when increasing financial and regulatory pressures caused the cessation of these activities. Proceeds from the resultant sale of land and buildings created the investment funds from which present-day activities are financed; at 31 December 2019 these funds stood at £43.23m. From the 1980s the Institute has pursued its objective of nurturing future leaders by the provision of grant funding to facilitate the research and careers of high-quality individuals working in areas of biomedicine relevant to preventive medicine. It has done this because it believes that the acquisition and advancement of knowledge is crucial to the understanding of health and disease and that research to achieve this is driven forward by high quality individuals and their supporting staff.

### **Principal Activities**

In pursuance of this objective, during 2019 the Institute awarded five new Prize Fellowships. In addition, the Institute has continued its Summer Studentship scheme that has enabled an increasing number of undergraduates per year to work with Lister Institute Fellows or former Fellows in order to gain experience of biomedical research with the hope that they might consider it as a career.

### **Achievement and Performance**

The Scientific Advisory Committee has monitored the performance of the current 35 Lister Institute Prize Fellows, through detailed review of the annual reports on their research that include details of all publications and presentations. The Scientific Advisory Committee has reported to Trustees that it is of the view that all Fellows are undertaking high quality research and producing new knowledge that will contribute significantly to our understanding of disease, its causes, treatment and prevention. The reports of the research undertaken by the Summer Students have also been reviewed and found to be satisfactory.

Five Lister Institute Prize Fellowships were awarded in 2019 to Dr Timothy Blower, Dr Ross Chapman, Dr Joanne Konkel, Dr Michelle Linterman and Dr William McEwan from an initial field of 135 applicants, following extensive scientific review of their applications and final interview by the Scientific Advisory Committee. (More details of the Prize Fellows and their research are provided on pages 2 and 3). Each Prize Fellowship provides £250k that may be spent over five years on the recipient's research, with all the funds provided to the host institution at the commencement of the award.

## REPORT OF THE GOVERNING BODY (CONTINUED)

Forty Summer Studentships were awarded in 2019. Each is a £2,000 student bursary and is paid to the host institution at the commencement of the award for the support of the student for up to a ten-week period.

The Institute maintained its commitment to fostering scientific interchange and collaboration within the Fellowship by holding its 35th Annual Research Fellowship meeting at Corpus Christi College, Oxford.

### **Public Benefit**

The statutory objectives aims and activities of The Lister Institute of Preventive Medicine are to further understanding in preventive medicine by promoting biomedical research, as set out on page 15 of this Report. The Trustees have considered the Charity Commission's guidance on public benefit, including the guidance 'public benefit: running a charity (PB2)'.

The public benefit of the Institute's grant-making is clearly identifiable in the 'Achievement and Performance' paragraphs above and in the list of Research Prize Fellows together with their areas of research on pages 10 to 13 of the Chairman's report. All Lister Institute Fellows are actively encouraged, where appropriate, to develop their research findings for potential public benefit and the Scientific Advisory Committee has regard to this when reviewing their research reports. The Lister Institute therefore benefits the public or a sector of it without imposing any restrictions. Applications from individuals are accepted only when demonstrably consistent with the charitable objectives of the Institute.

### **Impact**

The impact of the activities of a medical research charity can be measured at many levels ranging from the growth of knowledge to direct patient/public benefit. Often the transition from the former to the latter may take many years and the involvement of several organisations. The Institute requires that the results of the research it supports are published and disseminated; that, where appropriate, significant intellectual property is protected via patents; and that its commercial development is encouraged. Several biotechnology companies have been formed around the findings of Institute-funded research and there are several interactions with large pharmaceutical companies. A prime example of the impact of Lister Institute research is DNA fingerprinting, which was discovered by Sir Alec Jeffreys when a Lister Institute Fellow, and has become an integral part of society, helping to prove innocence or guilt in criminal cases, resolving immigration arguments and clarifying paternity.

### **Investment Policy and Performance**

The Institute's investment objective is to develop and maintain its financial resources through the selection of investments, consistent with an acceptable level of risk.

The Institute's investment portfolio is split between Cazenove Capital Management and Partners Capital LLP who both operate under mandates agreed in advance with the Finance and Investment Committee. These mandates (reviewed and updated in 2019) set out an overall target asset allocation with allowable ranges for each category of asset.

Both investment managers invest on a total returns basis through a variety of pooled funds and in accordance with the Institute's overarching "Investment Policy Statement" ("IPS"), which states the overall investment objective and sets the investment return objectives, the risk parameters, the performance measures and review procedures for the portfolio. The Institute's IPS was reviewed and revised in 2019. Specific versions were also agreed for each of the investment managers to reflect their individual investment approaches. The IPSs are reviewed annually. The investment managers are informed at the beginning of the financial year of the Institute's likely cash requirements, both in terms of the amount and the timing of any draw-down and are asked to keep in an income or cash account sufficient funds to meet them. The Institute has in place an ethical investment policy which does not permit direct investment in tobacco or tobacco-related companies.

The Institute's overall financial return objective is to preserve and, if possible, enhance the purchasing power of its portfolio assets, net of costs and approved withdrawals, over rolling five-year periods. This goal is synonymous with the pursuit of a time-weighted net return on portfolio assets that equals and, if possible, exceeds cost inflation as measured by the UK Consumer Price Index plus the Institute's long-term spending rate of 3-4% measured over corresponding five-year periods. This goal has been achieved over the previous five-year period.

The performance of the investment portfolio is reviewed by the Finance and Investment Committee, which held two meetings in the year with the investment advisors to review performance, liquidity within the portfolio, and the due diligence undertaken on potential new investment vehicles. In addition, the Institute receives detailed quarterly valuation and transaction reports. In a year that saw increasing volatility in the market the fund has still grown from £40.82m to £43.23m, correcting the losses seen in 2018. A decision, taken in 2015 (and ratified in subsequent years), to withdraw and place £5m in a Liquidity Account was based both on the recent strong growth of the portfolio but also concerns about future market volatility and performance. Given the increase in the number and level of the Fellowships a further discussion was held in 2019 and the decision was made to maintain £5m in this Account, on a rolling basis, to be reviewed annually. This decision will ensure that six Prize Fellowships of £250k each can be awarded for at least three years from 2020. Due to the material fall in markets since the year end triggered by the Covid-19 pandemic it is proposed that this Liquidity Account be used to finance the current year's activities. More details of the Institute's activities are set out in the Chairman's Report on pages 1 to 13.

## FINANCIAL REVIEW

### **Allocation of Resources**

The Institute, which does not seek to raise funds from the public, depends primarily on investment returns to meet its pension provision payments, administrative expenditure and expenditure in furtherance of the Charity's objectives. The total return on investments for the year was a realised/unrealised gain of £3.58m and investment income of £840k.

The resources expended totalled £1.783m of which £1.538m were resources expended for the Institute's charitable activities.

The Prize Fellowships are fixed sum awards and, therefore, expenditure can be regulated by altering the number and/or value of prizes awarded each year. In 2019, the Trustees felt able to award five Prizes of £250k each. As previously described, a £5m portfolio has been established so that the number and level of awards is sustainable over a minimum of three years.

Other payments in 2019 included 40 Studentship awards and the pensions of 4 previous employees of the Lister Institute.

### **Reserves Policy**

The policy of the Trustees is to maintain adequate financial resources to provide income to meet current and future commitments as they fall due and ensure that adequate funds remain available to enable them to make awards in perpetuity.

The adequacy of the level of reserves (£43.32m at the end of 2019) and the continuing appropriateness of the policy are reviewed on an annual basis by the Trustees. They continue to endorse the policy and its ability to support the long term viability of the Institute and, given that the Institute is not formally committed to awarding any Prizes beyond the current year, are confident in the ability of the Institute to maintain appropriate levels of activity in the short-term.

### **Plans for the Future**

The Institute's future policy is to continue to pursue its current objectives. It will therefore maintain and look to increase the Prize Fellowship scheme, which it sees as a funding priority. The Summer Studentship scheme will also be increased when possible.

### **Trustee Responsibilities Statement**

The Trustees (who are also directors of The Lister Institute of Preventive Medicine for the purposes of company law) are responsible for preparing the Trustees' Annual Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the 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 the incoming resources and application of resources, including

the income and expenditure, of the charitable company for that 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 SORP;
- make judgments and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis, unless it is inappropriate to presume that the charitable company will continue in business.

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

In so far as the Trustees are aware:

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

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

This Trustees' report has been prepared in accordance with the special provisions of Part 15 of the Companies Act 2006 relating to small companies.

By Order of the Governing Body

**SIR ALEXANDER F MARKHAM**  
Chairman

**MR MICHAEL FRENCH**  
Honorary Treasurer

30 April 2020

# INDEPENDENT AUDITOR'S REPORT

## to the Members of the Lister Institute of Preventive Medicine

### **Opinion**

We have audited the financial statements of The Lister Institute of Preventive Medicine ('the company') for the year ended 31 December 2019 which comprise the Statement of Financial Activities, the Balance Sheet, the Cash Flow Statement and notes to the financial statements, including a summary of 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 2019 and of its incoming resources and application of resources, including its income and expenditure, for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 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**

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

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

### **Other information**

The other information comprises the information included in the annual report, other than the financial statements and our

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

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in 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 for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Trustees' annual report has been prepared in accordance with applicable legal requirements.

### **Matters on which we are required to report by exception**

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the Trustees' annual report.

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit; or
- the Trustees were not entitled to prepare the financial statements in accordance with the small companies regime and take advantage of the small companies exemption in preparing the Trustees' Annual Report and from preparing a Strategic Report.

### **Responsibilities of Trustees**

As explained more fully in the Trustees' responsibilities statement set out on page 17, 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**

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 aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (UK) we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the charitable company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Trustees.

- Conclude on the appropriateness of the Trustees' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the charitable company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the charitable company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

### **Use of our report**

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

**LUKE HOLT** (Senior Statutory Auditor)  
for and on behalf of Kingston Smith LLP, *Statutory Auditor*

Devonshire House  
60 Goswell Road  
London EC1M 7AD

Date: June 2020

## STATEMENT OF FINANCIAL ACTIVITIES

for the year ended 31 December 2019

	Notes	2019 £'000	2018 £'000
<b>Income from</b>			
Investments	2	840	978
Other	3	6	9
<b>Total income</b>		<b>846</b>	<b>987</b>
<b>Expenditure on</b>			
Cost of raising funds			
Investment management costs	4	(245)	(215)
Charitable Activities			
Prizes and Summer Studentships	6	(1,538)	(2,015)
<b>Total expenditure</b>		<b>(1,783)</b>	<b>(2,230)</b>
Net gains (losses) on investments	9	3,579	(1,536)
<b>Net income/(expenditure)</b>		<b>2,642</b>	<b>(2,779)</b>
Other recognised losses			
Actuarial losses on defined benefit schemes	13	(8)	(15)
<b>Net movement in funds</b>		<b>2,634</b>	<b>(2,794)</b>
Reconciliation of funds:			
Total funds brought forward		40,687	43,481
<b>Total funds carried forward</b>		<b>43,321</b>	<b>40,687</b>

All items in the above Statement of Financial Activities relate to continuing operations for both years. The Institute has no other recognised gains and losses other than as stated above and hence no separate income and expenditure statement has been shown.

The notes set out on pages 23 to 28 form part of these financial statements.

## BALANCE SHEET

for the year ended 31 December 2019 Company no: 34479

	Notes	2019	2018
		£'000	£'000
<i>Fixed assets</i>			
Investments	9	43,226	40,824
<b>Total fixed assets</b>		<b>43,226</b>	<b>40,824</b>
<i>Current assets</i>			
Debtors	10	8	11
Cash at bank and in hand	11	303	69
<b>Total current assets</b>		<b>311</b>	<b>80</b>
<i>Current liabilities</i>			
Creditors: amounts falling due within one year	12	(73)	(62)
<b>Net current assets</b>		<b>238</b>	<b>18</b>
<b>Total assets less current liabilities</b>		<b>43,464</b>	<b>40,842</b>
<i>Creditors: amounts falling due after more than one year</i>			
Pension provision	13	(143)	(155)
<b>Net assets</b>		<b>43,321</b>	<b>40,687</b>
<i>Represented by</i>			
Unrestricted funds		43,321	40,687
<b>Total charity funds</b>		<b>43,321</b>	<b>40,687</b>

The Trustees have taken advantage of the exemptions conferred by the Companies Act 2006, on the grounds that the Institute is entitled to the benefit of those exemptions as a small company.

These financial statements were approved by the Governing Body on 30 April 2020

**ALEXANDER F MARKHAM**  
**MICHAEL FRENCH**  
Members of the Governing Body

The notes set out on pages 23 to 28 form part of these financial statements.

## CASH FLOW STATEMENT

for the year ended 31 December 2019

	2019	2018
	£'000	£'000
<b>Cash flow/(outflow) from operating activities</b>		
Net cash (used in)/provided by operating activities	(1,783)	(2,265)
<b>Cash flows from investing activities</b>		
Investment income	840	978
Proceeds from disposal of fixed asset investments excluding endowment funds	11,280	7,550
Acquisition of fixed asset investments excluding endowment funds	(9,366)	(5,376)
Other movements on investments	(737)	(951)
	234	(64)
Net increase/(decrease) in cash and cash equivalents	234	(64)
Cash and cash equivalents at beginning of year	69	133
<b>Cash and cash equivalents at end of year</b>	<b>303</b>	<b>69</b>
<b>Reconciliation of net income/(expenditure) to net cash flow from operating activities</b>		
	2019	2018
	£'000	£'000
<b>Net income/(expenditure)</b>	<b>2,634</b>	<b>(2,794)</b>
<b>Adjustments for</b>		
Net (gains)/losses on investments	(3,579)	1,536
Investment Income	(840)	(978)
Decrease/(increase) in debtors	3	12
Increase/(decrease) in creditors	11	(36)
(Decrease)/increase in pensions	(12)	(5)
<b>Net cash (used in)/provided by operating activities</b>	<b>(1,783)</b>	<b>(2,265)</b>



# NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 December 2019

## 1 PRINCIPAL ACCOUNTING POLICIES

### **Basis of preparation**

The Financial Statements have been prepared in accordance with the Statement of Recommended Practice, Accounting and Reporting by Charities (FRS102 SORP). The Financial Statements are prepared in accordance with the historical cost convention modified by the revaluation of investments. The charity is a Public Benefit Entity as defined by FRS102.

The Financial Statements are prepared in sterling which is the functional currency of the Charity. Monetary amounts in these Financial Statements are rounded to the nearest thousand pounds.

The principal accounting policies adopted in the preparation of the Financial Statements are as follows:

### **Income**

All incoming resources are accounted for on a receivable basis.

### **Prizes and summer studentships**

The cost of Research Prize Fellowships is charged in the year awarded.

### **Expenditure**

The costs of raising funds include those fees payable to the Institute's investment fund managers for the management of the Institute's investment portfolio. These are accounted for on an accruals basis.

Charitable activities comprise all expenditure directly relating to the objects of the charity and are accounted for on an accruals basis. The allocation of expenditure between governance and management, administration and support costs is reviewed on an annual basis to ensure the allocation is appropriate. Indirect costs are generally treated as falling into the latter category with the exception of a proportion of salary and related costs, which have been classified as governance costs.

In addition to auditor's remuneration, governance costs comprise the proportion of staff costs associated with the time spent on the preparation of the statutory accounts and other governance issues, together with honoraria remuneration provided to Members of the Institute's Scientific Advisory Committee for their duties in selecting the Prize Fellows.

### **Supplementary pensions and staff pensions**

An estimate of the full provision is made in the Financial Statements for the costs of future supplementary payments. The provision and charge to income are reviewed annually by the Trustees in the knowledge that the number of persons receiving the supplementary pensions will not increase. The pension costs are assessed in accordance with actuarial advice and these costs are accounted for in accordance with FRS102 SORP.

Existing employees participate in a defined contribution scheme, the costs of which are expensed as incurred. These disclosures are made in accordance with FRS102 SORP.

### **Tangible fixed assets**

Any capital items purchased under £1k in value are expensed in the accounts in full as incurred. The Charity has no tangible fixed assets.

### **Investments**

Investments are shown at market value in the balance sheet. Changes in the market value are included in the Statement of Financial Activities as realised and unrealised investment gains or losses in the year in which they arise. Investments denominated in foreign currencies are valued at year-end rates of exchange.

### **Cash flow statement**

The Charity has included a cash flow statement in accordance with FRS102 SORP.

### **Taxation**

The organisation is a registered charity and has obtained exemptions from taxation under Part 11, Chapter 3 of the Corporation Tax Act 2010. This exemption will remain as long as income is compatible with that section and expenditure is applied to charitable purposes only.

### **Critical accounting estimates and areas of judgement**

In preparing financial statements it is necessary to make certain judgements, estimates and assumptions that affect the amounts recognised in the financial statements. The Trustees consider the estimates involved in the valuation of investments to have most significant effect on amounts recognised in the financial statements. These are taken directly from Investment Manager's reports.

In addition, the company has an obligation to pay pension benefits to certain employees. The cost of these benefits and the present value of the obligation depend on a number of factors including: life expectancy, salary increases, asset valuations and the discount rate on corporate bonds. Management estimates these factors in determining the net pension obligation in the balance sheet. The assumptions reflect historical experience and current trends. See Note 13 for the disclosures relating to the defined benefit pension scheme.

### **Going concern**

The Trustees have assessed whether the use of the going concern basis is appropriate and have considered possible events or conditions that might cast significant doubt on the ability of the charity to continue as a going concern. The Trustees have made this assessment for a period of at least one year from the date of approval of the financial statements.

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 1 PRINCIPAL ACCOUNTING POLICIES *continued*

In making this assessment the Trustees have considered the impact of the Covid 19 pandemic and, as set out in Note 16, are satisfied that the substantial reserves and liquid assets held by the Lister Institute justify their belief that there are no material uncertainties that cast significant doubt on the charity's ability to continue as a going concern. The charity therefore continues to adopt the going concern basis in preparing its financial statements.

#### **Financial instruments**

The company has elected to apply the provisions of Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instruments Issues' of FRS 102 to all of its financial instruments. Financial instruments are recognised in the company's balance sheet when the company becomes party to the contractual

provisions of the instrument. Financial assets and liabilities are offset, with the net amounts presented in the financial statements, when there is a legally enforceable right to set off the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

With the exceptions of prepayments and deferred income all other debtor and creditor balances are considered to be basic financial instruments under FRS 102. See notes 10 and 12 for the debtor and creditor notes.

#### **Fund accounting**

Restricted funds are funds available subject to specific restrictions imposed by donors. Unrestricted funds are available for use at the discretion of the Trustees in furtherance of the general objectives of the Institute.

### 2 INVESTMENT INCOME

	2019	2018
	£'000	£'000
Income from fixed asset investments	839	977
Bank interest receivable	1	1
	<b>840</b>	978

### 3 OTHER INCOME

	2019	2018
	£'000	£'000
Royalty income CRT Ltd	6	9
Total other income	<b>6</b>	9

Royalty income is earned from Cancer Research Technology as a result of Revenue sharing related to Glover research studies £9k (2018: £20k).

### 4 INVESTMENT MANAGEMENT COSTS

	2019	2018
	£'000	£'000
Partners Capital LLP	91	124
Cazenove Capital Management	154	91
Total investment management fees	<b>245</b>	215

Investment management fees referred to here are those accrued fees relating to the management of the Institute's investment portfolios in 2019.

## 5 GOVERNING BODY AND STAFF COSTS

### Emoluments of members of the Governing Body

No member of the Governing Body received any emoluments in respect of services to the Institute during the year (2018: nil). Travel expenses of £2,151, were paid relating to the claims of eight members in connection with their attendance at meetings (2018: £3,060 seven members). Members of the Governing Body who are also members of the Scientific Advisory Committee receive remuneration in relation to their services to the committee. An honorarium of £2,000 (2018: £2,000) was paid to one of the members, the remainder all received £1,000 (2018: £1,000).

### Employee information

The average number of persons employed by the Institute during the year was 3.6, (2018: 3) two of whom are part-time (2018: 2). All staff were employed in an administrative and support capacity. No employees earn over £60,000 p.a. (2018: none). Key management personnel include the Trustees and the Director. The total employee benefits of the charity's key management personnel were £72,344 (2018: £56,116).

Staff costs	2019	2018
	£'000	£'000
Gross salaries	108	89
Pension contributions	4	3
Employer's national insurance	8	6
	120	98

The salary costs are allocated under governance where related to statutory accounts preparation, the balance being reported within charitable activities.

## 6 PRIZES & SUMMER STUDENTSHIPS

	2019	2018
	£'000	£'000
Prize awards	1,250	1,749
Summer studentship payments	80	72
Support costs (see note 7)	67	74
Salaries (see note 5)	105	86
Governance costs (see note 8)	36	34
	1,538	2,015

## 7 SUPPORT COSTS

	2019	2018
	£'000	£'000
Office expenses	19	23
Travel expenses	3	5
Professional fees	8	5
Honoraria and events	29	33
Pension costs (see note 13)	8	8
	67	74

These costs are all considered to be costs to support resources expended on charitable activities

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 8 GOVERNANCE COSTS

	2019	2018
	£'000	£'000
Auditor's remuneration - current year	11	11
- prior year over accrual	-	(2)
Staff costs (see Note 5)	15	12
Honoraria and events	10	13
	<b>36</b>	<b>34</b>

No non-audit services were provided by the auditors during the year (2018: none).

Auditors remuneration includes irrecoverable VAT.

### 9 INVESTMENTS

Listed investments are valued at middle market quotations ruling at the year-end

	2019	2018
	£'000	£'000
Market value at beginning of year	40,824	43,583
Purchases during the year at cost	9,366	5,376
Proceeds of sales during the year	(11,280)	(7,550)
Reinvested income for the year	681	908
Movement in un-invested cash	1,806	1,993
Cash withdrawn	(1,750)	(1,950)
Net change in market value	3,579	(1,536)
Market value at year-end	<b>43,226</b>	<b>40,824</b>

The portfolio's asset allocation was as follows

#### UK investments

Equities	5,319	6,725
Fixed interest	3,613	4,544
Other (including private equity, property, commodities, alternatives and inflation linked bonds)	5,765	5,147
Cash	3,748	2,922
<b>Total UK investments</b>	<b>18,445</b>	<b>19,338</b>

#### Non-UK investments

Equities	18,678	15,236
Other (including private equity, property, commodities and alternatives)	5,054	5,755
Cash	1,049	495
<b>Total Non-UK investments</b>	<b>24,781</b>	<b>21,486</b>
<b>Total</b>	<b>43,226</b>	<b>40,824</b>

At 31 December 2019 no single shareholding exceeded 5% of the total value of investments (2018: none).

Historical cost related to the closing position of 2019 was £34.47m (2018: £31.76m).

## 10 DEBTORS

	2019	2018
	£'000	£'000
Prepayments	2	2
Accrued income	6	9
<b>Total</b>	<b>8</b>	<b>11</b>

## 11 CASH

	2019	2018
	£'000	£'000
Cash at bank	303	69

## 12 CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	2019	2018
	£'000	£'000
Taxation and social security	4	3
Accruals	69	59
<b>Total creditors falling due within one year</b>	<b>73</b>	<b>62</b>

## 13 PROVISION FOR LIABILITIES AND CHARGES

This represents a provision for future supplementary pension payments, in respect of ex-employees, based on their salary and length of service. The pensions are unfunded, with payments made out of the Institute's funds as they fall due.

Movements in the pension provision during the year were as below

	2019	2018
	£'000	£'000
Liability at beginning of period	155	160
Plus interest cost	8	8
Plus actuarial gains and losses	8	15
Benefits paid	(28)	(28)
<b>Liability at end of period</b>	<b>143</b>	<b>155</b>

The tables below state the FRS102 actuarial assumptions used to estimate the pension provision.

*Principal actuarial assumptions* Valuation at 31 December 2019

	2019	2018
Rate of increase to pensions in payment	3.0%	3.0%
Rate used to discount scheme liabilities	5.0%	5.0%

The post-retirement mortality assumption uses the PCA00 base tables (year of birth) with improvements equal to medium cohort with a 1% minimum.

## 14 RELATED PARTY TRANSACTIONS

There were no related party transactions in the year, other than those outlined in note 5 (2018: none).

## 15 FINANCIAL INSTRUMENTS

	2019	2018
	£'000	£'000
Carrying amount of financial asset debt instrument at amortised cost	-	9
Carrying amount of financial liabilities measured at amortised cost	-	59

## 16 MEMBERS' LIABILITY

The liability of the Members of the institute is limited to 50p. At the date of the financial statements, there were 205 (2018: 200) Members, each with a guarantee potential of 50p.

## 17 POST BALANCE SHEET EVENTS

The Institute has given due consideration to the effects of the Covid 19 pandemic which broke out before these financial statements were signed. The Institute relies entirely on income and gains from its investment portfolio to finance its operating costs and its Prize Fellowship programme. As at the date of approval of these financial statements the investment portfolio had fallen by approximately £3M representing a 6% fall in market value. The Trustees have been concerned for some years that a material stock market correction might arise and, four years ago, set aside and still maintain £5 million in a Liquidity Account designed to retain its value in the event of such a correction. The intention has always been that this fund would then be used to enable the Institute to continue its activities for some years without having to realise other investments at a time when markets are depressed. Accordingly it is proposed that the Institute's activities in 2020 will be financed from the Liquidity Fund.

### Image Credit:

1. Front cover: Portrait of Lord Lister reproduced by courtesy of the Royal Veterinary College.
2. Front cover: Dr. Melina Schuh with PhD student Katarina Harasimov manipulating mammalian oocytes under the light microscope. Frank Vinken / Max Planck Society.
3. Inside front and back cover: PublicDomainPictures from Pixabay
4. Back cover: Human oral squamous cell carcinoma cell, SEM. Anne Weston, LRI, CRUK and John Marshall, Tumour Biology Lab.

# LEGAL AND ADMINISTRATIVE INFORMATION

for the year ended 31 December 2019

## *Business Address*

PO Box 2502  
Watford  
WD18 1AE

## *Solicitors*

Macfarlanes  
20 Cursitor Street  
London EC4A 1LT

## *Bankers*

Messrs Coutts & Co  
St Martins Office  
440 Strand  
London WC2R 0QS

## *Auditor*

Moore Kingston Smith  
Devonshire House  
60 Goswell Road  
London EC1M 7AD

## *Registered Office*

Macfarlanes  
10 Norwich Street  
London EC4A 1BD

## *Investment Advisors*

Cazenove Capital Management  
1 London Wall Place  
London EC2Y 5AU

Partners Capital LLP  
5 Young Street  
London W8 5EH

*Website:* [www.lister-institute.org.uk](http://www.lister-institute.org.uk)  
*Telephone:* 0203 532 5345

## THE GOVERNING BODY

Professor Sir Alex Markham, DSc, FRCP, FRCPath, FMedSci, *Chairman*  
Mr Michael French, BSc (Eng), FCA, *Hon Treasurer*  
Professor Judith Armitage, BSc, PhD, FRS  
Professor Wendy Bickmore, BA, PhD, FMedSci, FRS, FRSE  
Professor Sir Adrian P Bird, CBE, FRS, FRSE  
Professor Rebecca Fitzgerald, MD, FRCP, FMedSci  
Hon Rory M B Guinness, BA, FCIM  
Professor Douglas Higgs, MBBS, MRCPath, DSc, FRCP, FRCPath, FRS  
Mr Andrew Hutton, MA, CFA  
Professor John Iredale, FRCP, FMedSci, FRSE  
Professor Sir Alec J Jeffreys, CH, DPhil, FMedSci, FRS  
Mr Stephen McMahon, MA (Oxon), FCA, FCSI (*Appointed 6th September 2019*)  
Mr Matthew Pintus, BA  
Professor Dame Pamela Shaw, DBE, FRCP, FMedSci

## SENIOR MANAGEMENT

*Secretary and Director:* Ms Kate Law, BSc (*Retired 6th September 2019*)  
*Secretary and Director:* Dr Sally Burtles, BSc, PhD (*Appointed 6th September 2019*)

## THE SCIENTIFIC ADVISORY COMMITTEE

Professor John Iredale, FRCP, FMedSci, FRSE, *Chairman*  
Dr Ian Adams, BSc, PhD (*Retired 6th September 2019*)  
Professor Judi Allen, MPH, PhD, FRSE, FRSB, FMedSci  
Professor J Julian Blow, PhD, FRSE (*Appointed 6th September 2019*)  
Professor Cyrus Cooper, OBE, MA, DM, FRCP, FFPH, FMedSci  
Professor Margaret C Frame, PhD FRSE FMedSci (*Retired 6th September 2019*)  
Professor Aroon Hingorani, MA, PhD, FRCP (*Appointed 6th September 2019*)  
Professor Corinne Houart, PhD, (*Retired 6th September 2019*)  
Professor Catherine Nobes, BSc, PhD  
Professor Sir Mike Owen, PhD, FRCPsych, FMedSci, FLSW  
Professor Elizabeth Patton, BSc, PhD (*Appointed 6th September 2019*)  
Professor Barry V L Potter, MA, DPhil, DSc, CSci, FRSC, FMedSci  
Professor Fiona Powrie, FRS FMedSci  
Professor Christoph M Tang, MBChB, PhD, FMedSci  
Professor Josef Vormoor (*Retired 6th September 2019*)  
Professor Magdalena Zernicka-Goetz, MSc, PhD (*Appointed 6th September 2019*)

## THE FINANCE AND INVESTMENT COMMITTEE

Mr Michael French, BSc (Eng), FCA, *Chairman*  
Professor Judith Armitage, BSc, PhD, FRS  
Hon Rory M B Guinness, BA, FCIM  
Mr Andrew Hutton, MA, CFA  
Professor Sir Alex Markham, DSc, FRCP, FRCPath, FMedSci  
Mr Stephen McMahon, MA (Oxon), FCA, FCSI (*Appointed 6th September 2019*)  
Mr Matthew Pintus, BA

