Make this cover come alive with augmented reality. Details on inside back cover.
About WEHI

WEHI is where the world’s brightest minds collaborate and innovate to make discoveries that will help us to live healthier for longer.

Our medical researchers have been serving the community for more than 100 years, making transformative discoveries in cancers, infectious and immune diseases, developmental disorders and healthy ageing. From complex, long-term medical problems to critical health challenges, we shine a light on the most pressing needs of the community.

At WEHI, we bring together people with different skills and expertise, working together for 10, 20 or even 50 years to solve some of the world's most complex health problems.

The spirit of collaboration is in our DNA. WEHI was established by a partnership between the University of Melbourne, Royal Melbourne Hospital and the Walter and Eliza Hall Trust, bringing together the brightest research minds from across the globe, remarkable clinicians focused on the health of the community and the power of philanthropy.

Our passion for improving lives drives us forward, even when breakthroughs are decades in the making. These are the ingredients that make us special; shaping scientific thought, improving the health of the community and making WEHI a collaborative and energetic place to work.

We are driven by collaboration, curiosity and creativity. We are brighter because of our collaborations with hospitals, universities, research institutes and industry, because we have the support of our community, including philanthropists, donors, bequestors, alumni and consumers.

We are committed to making a positive difference to the lives of people in Australia and around the world. We are WEHI. We are brighter together.

Our research

Cancer – understanding the basic processes that are disrupted to generate cancer cells, and how these can be targeted to treat disease.

Immune health and infection – discovering how the body fights infection, and how errors in the immune system lead to disease.

Development and healthy ageing – studying how the biological foundations laid down during gestation and childhood affect development, and how our longer life expectancy presents new challenges for our ageing population.

New medicines and advanced technologies – a powerful hub for cutting-edge technologies underpinning biomedical discoveries and for the translation of these discoveries into new medicines and diagnostics.

Computational biology – developing and applying new tools to analyse the genomes of disease-causing parasites, as well as better understanding the immune system and genetic drivers of cancer.

Our mission

Mastery of disease through discovery

Our vision

To be an innovative medical research institute that enriches society through discovery and education and improves health outcomes through translation

Our values

- Pursuit of excellence
- Integrity and mutual respect
- Collaboration and teamwork
- Creativity
- Accountability
- Contribution to society
President’s report

Welcome to WEHI’s 2020 Annual Report. In reflecting on the past 12 months, could any of us have predicted how the year would unfold? I hope that as you read this report, you will sense the resilience and hope that our medical researchers bring to our community.

Many of our regular readers will have noticed a change in the look of this annual report. In 2020, WEHI revealed a new brand identity. Most noticeably, we are now WEHI – a name that is familiar to anyone who has met our teams or visited our laboratories – rather than the Walter and Eliza Hall Institute. More critically, our new brand reflects the WEHI we know and respect: a place where people come together to solve some of the world’s most significant health challenges. You can read more about why we are “brighter together” on page 4.

Like so many organisations, the changing landscape of 2020 meant that ensuring financial stability was a significant focus for WEHI. Many funding bodies faced their own financial challenges, while our establishment of a new COVID-19 research program meant that typical sources of funding, which can take months through the submission process, were not suitable for the speed with which we needed to resource our research.

I would like to offer my heartfelt thanks to all WEHI’s supporters who rapidly stepped in to support our COVID-19 research, as well as those who loyally continued their support of our longer-term research into other areas. As you will see from this annual report, both our COVID-19 research program, as well as our research into other infectious diseases, immune disorders, cancer, development and ageing, have all made impressive progress during the year – and in spite of the workplace challenges imposed by the pandemic.

I would like to particularly thank our new donors who responded to our request for support for COVID-19 research. We are thrilled that you have joined the WEHI community, and I look forward to ongoing engagement with you.

WEHI, along with other medical research institutes that lost revenue during the pandemic, was also a beneficiary of the Australian Government’s JobKeeper Program. We were grateful for this support which allowed us to continue our research, and support our researchers, despite the uncertain times.

At the Board level, our membership remained stable in 2020 with one exception: our University of Melbourne representative, Professor Shitij Kapur, will soon take up the position of President and Principal of King’s College London. As well as congratulating Shitij on this appointment, I would like to express my gratitude to him for his thoughtful and wise counsel on the WEHI Board, and his strong advocacy for the institute. I am thrilled to announce that Professor Jane Gunn will be the new University of Melbourne representative on our Board.

2021 in Australia is a time of hope. With the COVID-19 vaccine rollout having commenced here, and very well progressed in many countries around the world, I look forward to life returning to something closer to our ‘past normal’. At the Board level, this means continuing to focus on the governance and oversight of WEHI, enabling our scientists to progress their mission of improving health through discovery both now and into the future.

I send my best wishes to the entire WEHI community, and I look forward to reconnecting with you soon.

Mrs Jane Hemstritch
President, WEHI
Director’s report

2020 was like no other in my 35 years as a medical researcher. When I wrote my report last year, the COVID-19 pandemic had just started and we had no idea we faced an ultramarathon.

In 2020, health and medical research was in the spotlight like never before. Science has guided the Australian response to the pandemic – and I think this was why we avoided the much worse outcomes seen in other countries. Despite this, our community was heavily impacted, especially here in Victoria. As well as the tragic loss of lives and impacts on physical and mental health, the pandemic interrupted many of the simple routines and rituals of our lives.

In March, WEHI farewelled one of its most esteemed alumni, Professor Ian Mackay AM. I was absolutely privileged to join nine members of Ian’s family at his funeral and provide the eulogy. Ian was a brilliant clinician-scientist who improved the clinical management of autoimmune diseases. He will be remembered with the Professor Ian Mackay Travel Scholarship Fund, which he established himself with a foundation donation before his death. Vale Ian.

2020 showed us the importance of investing in infrastructure – with challenges surfacing in public health resources, medical technology manufacturing and supply chains. We also saw previous investments pay dividends. The presence of the global company CSL right here in Melbourne has meant Australia can produce its own vaccine supply, while CSL’s expertise in developing biologics therapeutics has benefited local COVID-19 research (see page 15). The Australian Synchrotron allowed our researchers to study the structure of key coronavirus proteins, while co-investment in the National Drug Discovery Centre by WEHI, philanthropists and the Victorian and Australian governments accelerated the development of potential new medicines against COVID-19 (see pages 14 to 15). I hope we learn from 2020 what we need to invest in, both to mitigate future health threats as well as drive a healthy and vibrant community.

In late 2019, as part of WEHI’s rebranding, we decided to switch the tag-line on WEHI’s logo to “brighter together”. I could not have imagined how prescient that would be. In 2020, we came together like never before. Collaboration has been at the heart of WEHI’s culture since our earliest days. In 2020, collaboration not just within WEHI, but locally, nationally and internationally, has been critical for research into COVID. It led to rapid diagnostics, therapies and even a vaccine, which have been developed in less than a year – without cutting corners or jeopardising safety. As WEHI has always done, our scientists responded to this urgent need and have made meaningful contributions to the global COVID-19 research effort, drawing not only on expertise in infectious diseases, but from across the breadth of our research. You can read about some of these amazing research efforts in this report.

Working together for a common good also shone in our community in 2020. I am inspired by Victorians embracing the sacrifices that were required to protect the vulnerable. I am heartened by how our community rallied to support health and medical research across this city. And I am in awe of the way WEHI’s own supporters sustained us. On behalf of every one of our 1100 staff and students – thank you.

Professor Doug Hilton AO
Director, WEHI
New name, new brand: launching a bright new era at WEHI

Collaboration, long-term discovery and a supportive culture are at the heart of what makes WEHI brighter together.

The COVID-19 pandemic shone a light on the essential role of medical research for the health of our community.

At WEHI, researchers rose to the challenge, leveraging longstanding expertise and a rich history of discoveries in virology, immunology and infectious diseases to tackle COVID-19.

It was the latest in a proud history of responding to the health needs of the community, something our researchers have been doing since WEHI was established in 1915.

Brighter together

WEHI brings together the brightest minds from around the world to collaborate, innovate and shine a light on some of humanity’s biggest health challenges.

The rebrand formally adopts the abbreviation WEHI, a new image and name that Professor Doug Hilton AO said better reflected the WEHI that its staff, students and supporters know.

“What I love about this new way of representing WEHI is that it pays tribute to our heritage, while also bringing a contemporary look that reflects the dynamic medical research we are known for,” Professor Hilton said.

“WEHI isn’t just a place where discoveries are made, it’s where scientific theories are debated, investigated, pursued and celebrated. This is how we will continue to make impactful discoveries into the future.”

“Our tagline – brighter together – encapsulates what I felt when working alongside Professor Don Metcalf, Professor Nick Nicola and their team, who collaborated for more than 30 years to discover and characterise the blood cell hormones colony stimulating factors, which have been life-saving for millions of people worldwide.”

Above: WEHI’s new logo captures the essence of our brand. Below: WEHI brings the brightest minds together to solve some of humanity’s biggest health challenges. Pictured: Dr Andre Samson (left) and Dr Katherine Davies (right), who were part of a team that used advanced technologies to understand an inflammatory cell death process (see page 25).
About WEHI

Community support

WEHI Board president Mrs Jane Hemstritch said the new look would stand the institute in good stead for the future.

“WEHI is exceptional, not just for its age or its history of medical discoveries, but also for its unrelenting drive to innovate and be the best it can be.”

“We wanted to create a brand that reflects the innovation and creativity we’re known for and I think this new brand really hits the mark,” Mrs Hemstritch said.

Supporters have welcomed and applauded the new look, including Federal Health Minister Greg Hunt who said it symbolised WEHI’s commitment to evolving to meet the needs of the medical research community into the future.

“WeHI is one of the world’s great medical research institutes and is fundamental in developing new treatments to address global health challenges. I look forward to its continued medical breakthroughs that will provide relief and hope to many Australians into the future,” Minister Hunt said.

Collaboration and long-term discovery

WEHI has a 100-year history of achievement, from discoveries in polio and influenza that informed the development of vaccines, to fundamental immunology research that is informing immunotherapy and COVID-19 research, to discoveries about cell death that led to new anticancer drugs.

Fundamental to those successes were collaborative teams – within WEHI, across research institutes, universities, hospitals and industry – and the support of long-term partnerships with donors, consumers and government.

One thing that makes WEHI unique was its commitment to collaboration and long-term discovery, Professor Hilton said.

“I love the fact that at WEHI you see 20-year-olds working alongside 40-year-olds, 60-year-olds and 80-year-olds, all from diverse backgrounds, each respected and valued for the work they do and the ideas they bring. It’s a long-term and passionate commitment to solve complex health problems in a wholehearted way. It’s something I feel truly sets us apart,” he said.

Responding to COVID-19

Professor Hilton said the COVID-19 pandemic had placed a focus on medical research that was almost unprecedented.

“It’s been heartening to see the medical research community band together with universities, hospitals, industry, government and philanthropists, to respond to this health emergency.”

“We are better and brighter when we work together – that’s something that is really at the heart of the WEHI ethos.”

He said the spotlight on medical research afforded an important opportunity to expand public awareness of WEHI.

“We want the community to know about the exciting fundamental discoveries we are making. We’ve always been bold in our work. Now we need to be bold in how we talk about WEHI and our work, raise community awareness of WEHI and, in turn, increase support for our work,” Professor Hilton said.
National Drug Discovery Centre launched

WEHI’s state-of-the-art facility to fast-track new medicines for Australian patients was officially opened by Australian and Victorian Ministers for Health in March 2020.

A unique resource

Based at WEHI’s Parkville campus, the $75 million National Drug Discovery Centre (NDDC) is the first of its kind in Australia, providing researchers with access to specialist high-throughput screening, which is one of the first steps in translating biological discoveries into new medicines.

The advanced robotic high-throughput screening enables the rapid analysis of hundreds of thousands of test compounds to assess their potential as starting points for new medicines targeting specific proteins or biological processes, dramatically reducing the time it takes to bring new medicines to patients. Prior to the establishment of the NDDC, Australia did not have a facility that could perform work on this scale.

Researchers from Australian research institutes and small-to-medium enterprises can access the NDDC with a 90 per cent cost subsidy available from the Australian Government’s Medical Research Future Fund (MRFF). During 2020, six projects that were subsidised included those investigating new treatments for type 2 diabetes, drug-resistant prostate and breast cancers, blood cancers, antibiotic-resistant infections and Prader-Willi Syndrome.

A timely concurrence

On the same day the NDDC was officially opened, the World Health Organization declared COVID-19 a pandemic. Throughout 2020 the NDDC was also used to test more than 400,000 compounds to find starting points for new drugs specifically aimed at blocking one of the SARS-CoV-2 virus’s key enzymes (see page 14). This contribution to critical coronavirus research was also made possible by support from the MRFF.

Funding for a healthier future

The establishment of the NDDC was generously supported by $25 million from the Australian Government and $18 million from the Victorian Government, with a $32 million investment from WEHI, which included royalty revenue and generous seed funding from philanthropists.

WEHI director Professor Doug Hilton AO recognised the contributions of the Australian and Victorian Governments, and philanthropic donors, for bringing the NDDC to life and ensuring researchers have access to the latest technologies to advance their projects.

“We look forward to seeing these ground-breaking research projects progress in the years to come, resulting in new treatments for patients in Australia and around the world,” he said.
WEHI director named 2020 Melburnian of the Year

The City of Melbourne awarded its highest accolade, Melburnian of the Year, to WEHI director Professor Doug Hilton AO for his leadership in the medical research sector and contribution to the Melbourne community.

The award was part of the 2020 Melbourne Awards, recognising people who had demonstrated acts of kindness, integrity and community spirit during the COVID-19 pandemic.

Professor Hilton said he was humbled to receive the award, and that it was a reflection of the entire WEHI team and the scientific community more broadly.

"WEHI was Melbourne’s first medical research institute and, in the 105 years since it was established, has continued to play a vital role in responding to community need," he said.

"It was inspiring to see how our researchers rallied together, not only within WEHI but also with our partners around Melbourne and Australia, to respond to the COVID-19 pandemic. We are working more collaboratively than ever before and with an incredible generosity of spirit to deliver benefit to the community.

"As someone who has spent most of my life living and working in Melbourne, I’m really proud of how our community got through such a difficult period and how we have supported one another during these challenging times," he said.

Above: Professor Doug Hilton AO
Fulfilling a long-held ambition to give back to WEHI

Nearly 60 years after starting a postdoctoral fellowship at WEHI, US-born Dr Leslie Norins found himself, together with his wife Rainey, re-engaging with WEHI on their new research priority—encouraging faster progress against Alzheimer’s disease.

Dr Norins sees philanthropy as a practical and impactful way of giving back to WEHI, and improving the health of current and future generations.

A formative experience

Dr Norins first became involved with WEHI in 1962, after graduating as a physician from Duke University School of Medicine in North Carolina, US. He recalls his fellowship as a formative time, being exposed to “high-level research, top staffers, Australian and WEHI friendliness”. Luminary role models included “Sir Mac” (Nobel Laureate Sir Frank Macfarlane Burnet, his overall supervisor) and Dr Margaret Holmes (day-to-day supervisor). He also encountered Sir Gustav Nossal, Professor Ian Mackay and Professor Don Metcalf at seminars and in the tea room.

“What a powerhouse to influence the ‘wet clay’ of an impressionable young physician and new researcher.”

Dr Norins went on to work at the US Government’s Centers for Disease Control and Prevention (CDC) and became the youngest director of its Venereal Disease Research Laboratory, one of its largest. CDC sent him around the world visiting top immunology labs to help revive research into classic sexually transmitted diseases overlooked by modern investigators. “My first stop was WEHI,” he said. “I think Sir Mac was very pleased one of his researchers had made career progress.”

Dr Norins had a long-held ambition to thank WEHI for his important early training. So, following a highly successful career in medical publishing, when the timing was right for them, Dr and Mrs Norins started giving to WEHI, and have been doing so since the late 1980s. They have also decided to leave a significant lasting legacy, through a gift in their wills, which will go on to benefit future generations for many years to come.

A focus on Alzheimer’s disease

Dr Norins’ focus has turned to Alzheimer’s disease. This focus is shared by Mrs Norins, who has lost her mother and other family members to the devastating illness. “We are alarmed at its prevalence, and the fact that the cause and cure are still unknown—despite billions of dollars spent on research worldwide,” he said.

Dementia, including Alzheimer’s disease, is the second leading cause of death of Australians and the leading cause of death of Australian women.

In 2017, Dr and Mrs Norins established the Alzheimer’s Germ Quest to stimulate and accelerate research on possible infectious causes of Alzheimer’s disease. Dr Norins had conducted a two-year review of scientific literature and found evidence—largely neglected—that germs may be the root cause, or trigger, for Alzheimer’s. He addressed an audience at WEHI in 2019 on the Quest, which carried a $1 million prize for persuasive proof of ‘the Alzheimer’s germ’. He provided examples of unexpected microbes that have been found to be the cause of other diseases, once considered mysteries.

WEHI similarly has a focus on Alzheimer’s disease, assembling a specialised, multi-disciplinary team with world-leading expertise to drive research under its Healthy Development and Ageing theme. The team aims to achieve the significant breakthroughs needed to develop diagnostic approaches and targeted therapies to counter this increasingly common condition.

Above: Dr Leslie Norins (right) and his wife Mrs Rainey Norins (left) are championing innovative research into Alzheimer’s disease.
Vale Professor Ian Reay Mackay AM (1922 – 2020)

In March 2020, WEHI farewelled alumnus Professor Ian Mackay AM, a pioneer of research into autoimmune diseases.

Professor Mackay, a clinician-scientist, was among the first to identify that diseases such as lupus and rheumatoid arthritis were caused by the body’s immune system mistakenly attacking its own organs and tissues. His research led to a new era of ‘immunosuppressive’ treatments for autoimmune diseases, which diminish the immune response to reduce disease symptoms, and have saved many lives.

WEHI director Professor Doug Hilton AO said Professor Mackay was truly a scientific pioneer. “We will remember Ian’s incisive mind, exacting standards and laser-like focus on solving major clinical problems. He championed WEHI’s commitment to translational research and shaped the institute we have today. He is greatly missed by his colleagues and friends.”

Professor Mackay’s remarkable contributions will be remembered with the Professor Ian Mackay Travel Scholarship Fund, which he established himself with a foundation donation before his death. Scholarships from this fund will support the bright young immunology researchers who will be making key discoveries in the years to come. The fund will enable them to travel to scientific conferences across the globe, helping them build crucial professional and collaborative networks, and ensuring they can present their latest research to their peers.

| Above: Professor Ian Mackay AM in 1966 |
Our supporters

The supporters who make our discoveries possible.

The advances in medical science at WEHI are made possible by our generous supporters. We are proud to acknowledge these gifts, grants and bequests received from 1 January to 31 December 2020. Gifts of $1000 or more are acknowledged, unless otherwise requested by our donors.

WEHI also acknowledges the support of the Australian Government and the Victorian Government, and the support of our community who pay the taxes that enable funding through these governments.

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Contents
10
WEHI 2020 Annual Report
Mr Neville Castles
Ms Kaye Cleary
Mr Arthur Coates
Mr Mark Devlin and Mrs Elizabeth Devlin
Mr Matt Duckworth and Mr Nathan Duckworth
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Ms Kay Ehrenberg and Mr Scott Herne
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Australian Government grants
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The J Elliston Endowment

Trustee Companies
Australian Communities Foundation
Australian Executor Trustees
Equity Trustees
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Exceptional science and people

Dr Sarah Best (left), PhD student Mr Jonas Hess (centre) and Associate Professor Kate Sutherland (right) led research revealing that immune cells called ‘natural killer’ cells could be a powerful weapon for fighting lung cancer.
Rapidly responding to the COVID-19 pandemic

2020 will be remembered for the global impact of the COVID-19 pandemic. WEHI rapidly joined the global scientific effort to understand COVID-19, and develop new approaches to prevent, diagnose and treat this disease.

COVID-19 is the disease caused by the SARS-CoV-2 virus, which is part of a broad family of coronaviruses that cause illnesses ranging from mild colds through to life-threatening diseases with pandemic potential including SARS and MERS. COVID-19 is unlikely to be the last serious coronavirus epidemic faced by humanity. WEHI’s COVID-19 research program aims to develop new ways to prevent, diagnose and treat COVID-19, and also contribute discoveries that could be rapidly deployed against potential future coronavirus diseases.

WEHI’s COVID-19 research builds on expertise and technologies our researchers established through research into disparate diseases including malaria, hepatitis B, rheumatoid arthritis, immunodeficiencies, cancer and Parkinson’s disease. Drug discovery – spearheaded by the National Drug Discovery Centre (NDDC) – has also been a critical facet of WEHI’s COVID-19 research.

Collaboration is central to WEHI’s approach to research, and has been critical for our COVID-19 program, leveraging existing partnerships as well as establishing new connections with local, national and international research institutes, hospitals and industry partners.

Discovering new coronavirus drugs

Developing medicines to treat COVID-19 and future coronavirus diseases has been an important aspect of WEHI’s research. This has included a search for small molecules that interfere with the COVID-19 viral machinery, as well as applying WEHI’s biologics drug development platform to discover antibody-based medicines against COVID-19.

Using our established infectious diseases research facilities, our researchers tested libraries of potential antiviral medicines for their actions against the SARS-CoV-2 virus. The NDDC also enabled the screening of drug-like small molecule compounds for antiviral activity. Professor Marc Pellegrini, who leads WEHI’s COVID-19 research program, said these were complementary approaches.

“Potential antiviral medicines are more limited in number, but have properties that would mean that any positive ‘hits’ could be rapidly progressed into clinical testing. In contrast, small molecule screens take a broader approach, so might be more likely to find compounds with activity against COVID-19, but these compounds would take longer to develop into medicines, and would need in-depth assessments for safety and pre-clinical activity,” he said.

The NDDC’s application program was also modified to accelerate any promising Australian COVID-19 projects.

“COVID-19 drug discovery proposals can be submitted by Australian researchers to the NDDC at any time, in contrast to other projects that have access to defined application rounds during the year. This recognises the urgency of COVID-19 research: we are keen to ensure any promising project begins as soon as possible,” Professor Pellegrini said.

SARS drug offers hope

Coronaviruses, including the viruses that cause COVID-19 and SARS, all contain a protein called PLpro, which allows the virus to hijack human cells and disable their anti-viral defences. Professor David Komander said PLpro belonged to a family of proteins called “deubiquitinases” (DUBs), which his team had studied for the past 15 years in a range of diseases.

“Deubiquitinases are a key component of coronaviruses, so in response to the COVID-19 pandemic we quickly established the VirDUB program, focussing on SARS-CoV-2 PLpro,” he said.

The VirDUB team used structural biology to understand how SARS-CoV-2 PLpro interacted with human proteins, revealing how drugs could potentially inhibit the viral protein.

“Using the NDDC, we then scanned thousands of drugs and drug-like compounds to find those which could block PLpro. We discovered that compounds which had already been developed against SARS PLpro could prevent the growth of SARS-CoV-2 in pre-clinical testing in the laboratory,” Professor Komander said.

The next stage of the research is to develop the compounds into medicines, and ensure they are safe for patients.

“Drugs that target PLpro may be useful not just for COVID-19 but potentially also for other coronavirus diseases that emerge in the future,” he said.

Biologics therapies for COVID-19

‘Biologics’ medicines mimic naturally occurring proteins such as antibodies, proteins produced by immune cells to fight infection. In particular, monoclonal antibodies have emerged as powerful diagnostics and therapeutics in the past three
decades, and are now the leading treatments for a variety of human diseases, particularly for cancer, autoimmunity and chronic inflammatory diseases.

A collaborative consortium was established to develop antibody-based anti-viral medicines for COVID-19, bringing together Victoria’s and Australia’s foremost academic and industry leaders in infectious diseases and antibody therapeutics from WEHI, Doherty Institute, Burnet Institute, Kirby Institute, CSIRO, CSL and Affinity Bio.

Lead researcher Associate Professor Wai-Hong Tham said the consortium had assembled a suite of technologies and expertise to expedite the identification and development of biological therapeutics against SARS-CoV-2.

“Therapeutic monoclonal antibodies that prevent SARS-CoV-2 from binding to cells – the first step in the infection cycle – could have applications for preventing or treating infection in vulnerable groups such as the immunosuppressed and the elderly, and to provide immediate protection to limit outbreaks,” she said.

“Our next step is to secure funding to manufacture, produce and advance our lead antibody cocktail into clinical trials in Australia.”

Critical funding boosts COVID-19 research

The urgency and scale of WEHI’s COVID-19 research response was enabled by rapid and agile funding from both philanthropists and governments.

Melbourne-based company, the Hengyi Group, responded quickly to the emerging pandemic in March 2020 by donating to WEHI’s new COVID-19 research program. This funding was in addition to Hengyi’s support of a Centenary Fellowship in Parkinson’s disease through its charitable arm, the Bodhi Foundation.

COVID-19 research projects led by WEHI were boosted by significant support from the Australian Government’s Medical Research Future Fund, as well as the Victorian Government.

Below: Associate Professor Wai-Hong Tham led a consortium to develop antibody-based medicines for COVID-19.
Multidisciplinary research tackles COVID-19

WEHI’s researchers have applied a diverse range of expertise towards improving the prevention, diagnosis and treatment of COVID-19.

Rapid testing platform developed

A fast, new test for infections – including the SARS-CoV-2 virus – has been developed, which could transform Australia's ability to provide targeted clinical care and respond to pandemics and biosecurity threats.

WEHI is leading the c-FIND research program, in collaboration with Melbourne Health, Murdoch Children's Research Institute, Peter MacCallum Cancer Centre, The Royal Children's Hospital and the University of Melbourne, as well as local biomedical technology company Axxin Pty Ltd.

The test rapidly and accurately detects multiple viral, bacterial or fungal genomes within minutes – much faster than existing tests that can take days or even weeks to return a result.

Associate Professor Marco Herold, whose team adapted CRISPR gene-editing technologies to develop c-FIND, said the test could improve patient diagnosis and treatment.

“In the case of COVID-19 – and future diseases with pandemic potential – rapid diagnosis would be of huge benefit, helping to quickly identify and isolate infected people, preventing the spread of the infection. We are now working with Axxin to translate c-FIND into a portable, point-of-care device,” he said.

“Such a device could be used to rapidly screen for infections in healthcare, as well as at ports of entry. This would enable more rapid detection and mean infected people would receive the right treatment sooner, which could be lifesaving, particularly for cancer patients or young children, who are highly susceptible to infections.”

Gold-standard trial examines potential preventative drug

Healthcare workers around the world were heavily impacted by the COVID-19 pandemic, through repeated exposure to the infection while caring for patients.

WEHI established the COVID SHIELD trial in partnership with human data science company IQVIA and healthcare providers in Victoria and New South Wales to rigorously test whether the widely used medicine hydroxychloroquine could protect healthcare workers from contracting COVID-19.

Professor Marc Pellegrini, who jointly led the study, said in pre-clinical models hydroxychloroquine appeared to interfere with SARS-CoV-2 infections.

“This led to considerable speculation about whether this drug could be used to prevent or treat COVID-19 infections. A range of clinical trials were initiated around the world to address these questions – including COVID SHIELD,” he said.

“COVID SHIELD is gold-standard in its design as a multi-centre, randomised, double-blind study. Unlike many trials that treated people who were already sick with COVID-19, or had already been exposed to the virus, COVID SHIELD focussed on protecting healthy people before they were exposed – and was limited to healthcare workers, as they had a higher risk of contracting COVID-19.”

The trial was co-led by WEHI’s joint Head of Clinical Translation, Professor Ian Wicks, a rheumatologist with considerable experience in using hydroxychloroquine to treat autoimmune diseases.

“Hydroxychloroquine is a well-known prescription medicine that has been used for more than 50 years. Like most medicines, it has some side-effects, but these are well known and can be carefully managed. Our trial included rigorous selection criteria and close monitoring of participants to ensure their safety,” Professor Wicks said.

COVID SHIELD concluded its patient recruitment in late 2020, with results expected during 2021.

Risk factors for severe COVID-19 discovered

One of the mysteries of the COVID-19 pandemic has been why some infected people become seriously ill, while others have mild or asymptomatic infections.

WEHI computational biologists Dr Chin Wee Tan and Associate Professor Melissa Davis collaborated with Queensland University of Technology, the Translational Research Institute and the University of Queensland to investigate which human genes are activated in people infected with SARS-CoV-2, using an innovative spatial transcriptomics platform.

Associate Professor Davis said the research revealed the expression of a gene called IFI127 was associated with developing severe COVID-19.

“Looking at samples from our collaborators in Brazil, we discovered IFI127 may be a valuable biomarker to identify those people at highest risk of progressing to severe disease – potentially allowing them to be more aggressively treated. IFI127 is a gene involved in immune responses to viruses, so we think it could also help to explain how COVID-19 can progress to a severe form,” she said.
The highly collaborative research – as part of a broader COVID-19 program at the University of Queensland – was recognised with a 2020 AusBiotech and Johnson & Johnson Innovation Industry Excellence Award.

Clinical study examines immune responses

WEHI researchers established a study to understand how immunity to COVID-19 develops, how long it lasts and what happens when immunity is lost – key information that could guide vaccination strategies.

The COVID PROFILE study is looking at immune markers in the blood of people who had recovered from COVID-19, and their close contacts who did not catch the disease. Dr Vanessa Bryant said the research aimed to answer important questions about whether people could be re-infected with SARS-CoV-2 after infection or vaccination, and how long they are protected for.

“We also hope to understand how immune responses can contribute to the severity of COVID-19, how they recover and potentially discover biomarkers for severe disease. These are critical questions in the scientific community, and will guide our responses to COVID-19 for years to come,” she said.

The research arose from a similar study of immune responses to malaria (see page 18), said lead researcher Professor Ivo Mueller.

“Our team had developed computational methods that allow accurate tracking of immune responses over time, which could be rapidly adapted to understand COVID-19 immunity,” he said.

COVID PROFILE – which is continuing in 2021 – is a collaboration with The Royal Melbourne Hospital, the University of Melbourne and the Doherty Institute, with funding support from the World Health Organization’s UNITY study and philanthropic supporters.

Below: Clinician-scientist Professor Marc Pellegrini has led WEHI’s COVID-19 research program.
Collaborations accelerate malaria research

WEHI’s malaria research program takes a multidisciplinary approach to combating this mosquito-borne disease and using this knowledge to develop better prevention and treatment strategies.

Partnerships with academic, government, philanthropic and industry collaborators are critical for the progression of our malaria research.

Progress towards new drugs

A collaboration between WEHI and global biopharmaceutical company MSD, with funding support from the Wellcome Trust, has led to the discovery of a promising new class of antimalarial compounds. The compounds target an unexplored parasite pathway and could potentially overcome drug-resistant malaria, an ongoing and increasingly urgent problem, said Professor Alan Cowman, who leads WEHI’s malaria research program.

“In preclinical testing, the lead compound killed malaria parasites in the host and prevented transmission back to the mosquito. This was very exciting to see, as current antimalarial drugs kill the malaria parasite in the blood but do not fully prevent transmission,” Professor Cowman said.

“This new class of antimalarial compounds could fill a critical and widening gap in our efforts to control and eliminate malaria. We hope drug candidates based on these efforts will soon progress to human phase 1 clinical trials.”

Blood test may enhance surveillance

A new diagnostic test could provide vital information about the spread of malaria in communities. A collaborative team led by researchers from WEHI, Pasteur Institute (France) and Ehime University (Japan) developed a way of measuring immune markers in the blood to detect whether – and when – a person has been infected with Plasmodium vivax, a parasite species that causes relapsing malaria.

Research team leader Professor Ivo Mueller said the test could enable better surveillance and deployment of resources to areas where malaria remains, as well as targeted treatment of infected individuals, who may carry ‘silent’ infections. “This could be a huge improvement in how vivax malaria is controlled and, hopefully, enable its elimination from the Asia-Pacific and Latin America,” he said.

With support from a National Health and Medical Research Council (NHMRC) Development Grant, the research team are now working with Australian biotech company Axxin to develop a diagnostic test for malaria that can be deployed in the field, based on the immune markers the laboratory testing identified, said malaria researcher Dr Rhea Longley.

“Having a rapid field test for vivax malaria exposure will be an important aspect of our future clinical trials that will investigate how these tests can guide malaria elimination efforts,” she said.

The development of a test that accurately monitors exposure to infections has also been adapted to other diseases, Professor Mueller said.

“In collaboration with the Pasteur Institute, we have developed a test that measures immune responses to COVID-19. This could be a valuable tool for monitoring disease spread in communities where insufficient virus testing efforts could be leading to undetected disease spread,” he said. This research has also been incorporated into the COVID PROFILE clinical study in Melbourne (see page 17).

Above: Malaria researcher Dr Rhea Longley was joint winner of WEHI’s highest honour, the 2020 Burnet Prize. She shared the honour with immunology researcher Dr Cyril Seillet, who was recognised for his studies of front-line immune cells that regulate inflammation.
Our cells are constantly communicating with each other, and errors in cell signalling contribute to a range of diseases including cancer. A five-year, $1.25 million CSL Centenary Fellowship is enabling new laboratory head Dr Alisa Glukhova’s structural biology investigations into cell signalling.

Dr Glukhova, who joined WEHI in 2020, said her research focused on a signalling protein called Wnt. “Wnt travels between cells, binding receptors on the cell surface. This triggers a domino-like series of protein changes within the cell, resulting in changes in the cell’s behaviour,” she said.

“Wnt signalling is essential for the function of normal cells, and driving responses ranging from changes in a cell’s shape and cell division, through to the cell dying. In cancer cells, Wnt signalling can control how the cancers grow and progress – and drugs targeting this pathway could be new cancer therapies.”

To understand how Wnt binds to receptors, Dr Glukhova is looking at the three-dimensional structures of the proteins, using advanced technologies including X-ray crystallography and cryo-electron microscopy. Her goal is to discover new details about how Wnt binds to and signals through its receptors, potentially revealing how new drugs might block this process.

“Receiving a CSL Fellowship has given my research an enormous boost because it provides a valuable window of time and funding in which I can progress my investigations. I hope that within the next five years I will have made significant progress in understanding Wnt signalling, and that this knowledge could inform the development of better medicines for diseases such as cancer,” she said.
Influencing gene expression

Understanding how genes are switched on and off provides insights into the function of healthy and diseased cells. A research team led by Professor Marnie Blewitt is focused on the role of a protein called SMCHD1, which switches genes off, preventing their expression. Inherited changes in SMCHD1 have been linked to rare degenerative and developmental disorders, said Professor Blewitt.

“Our goal is to reveal how SMCHD1 functions in healthy cells, as well as to better understand the diseases that are associated with changes in SMCHD1,” she said.

A study led by Professor Blewitt, PhD student Dr Iromi Wanigasuriya and Dr Quentin Gouil used advanced genomics technologies and imaging to reveal a mother’s SMCHD1 protein lingers in her developing embryo, impacting gene expression.

Dr Wanigasuriya said this was the first time SMCHD1 from the mother had been linked to a phenomenon called ‘genomic imprinting’, in which genes are differentially expressed depending on whether they are inherited from the mother or the father.

“Genomic imprinting can have long-term health impacts, and is seen in certain inherited diseases,” she said. “Our research has expanded our understanding of how SMCHD1 functions, including uncovering additional gene targets that SMCHD1 switches off.”

Structure explains protein function

A separate study used structural biology to create a three-dimensional ‘map’ of a key part of SMCHD1. This research was led by Professor Blewitt, Associate Professor James Murphy, Dr Richard Birkinshaw, Dr Alexandra Gurzau and Associate Professor Peter Czabotar.

Associate Professor Murphy said the protein structure revealed how SMCHD1 bound to genes, and why some disease-associated changes in SMCHD1 prevent it from functioning.

“These studies have given us important new insights into how small drug-like molecules could be used to alter the function of SMCHD1. We hope this will lead to the development of new therapies for diseases associated with the protein,” he said.

Searching for new medicines

Professor Blewitt and the team are now working to develop new medicines that target SMCHD1. The project was fast-tracked thanks to an Australian Government-funded subsidy to enable access of the National Drug Discovery Centre (NDDC) at WEHI (see page 6).

“Access to the NDDC will enable us to develop drugs that modulate SMCHD1 function as potential new treatments for people with Prader-Willi Syndrome, a debilitating and incurable developmental disorder for which targeting SMCHD1 would treat the cause of disease,” Professor Blewitt said.
Understanding mucus

Mucus is secreted in the respiratory, gastrointestinal and reproductive tracts, and serves important functions such as keeping surfaces moist and acting as a barrier to infection. People with chronic respiratory diseases typically produce too much thick mucus in their lungs, making it difficult to breathe. Mucus is mostly comprised of water and mucin glycoproteins which are very long protein strands coated with glycans – a type of sugar molecule.

Associate Professor Ethan Goddard-Borger said his team revealed that proteins called ‘trefoil factors’ interact with mucins by recognising and binding to the unique glycan signatures on their surface.

“Trefoil factors have long been known to make mucus more viscous (thicker), and it has been postulated that this thickening occurs in respiratory diseases. However, until now we did not completely understand how the trefoil factor proteins achieved this,” he said.

The team used structural and chemical biology to reveal that trefoil factors cross-linked mucin strands to make the mucus gel more rigid.

“Trefoil factors essentially ‘staple’ the mucin strands into a mesh: the more staples, the denser the mesh and the thicker the mucus becomes,” Associate Professor Goddard-Borger said.

Improving respiratory health

Understanding what trefoil factors bind to and how they do this represents a significant leap forward in understanding mucus and how it functions in healthy and diseased airways.

“We are now investigating how to disrupt the bonds created between trefoil factors and mucin strands, to reduce the viscosity of mucus but leave enough in the lungs to allow the clearance of microbes, particles and dead cells. The development of such a technology could lead to new therapeutics for the treatment of respiratory diseases,” Associate Professor Goddard-Borger said.

“Our aim is to develop new ‘mucolytic’ drugs that can thin mucus, so it can be more effectively cleared from the airways.”

“Achieving this could make a significant impact on the quality of life and life expectancy of people struggling with debilitating respiratory conditions.”

Below: Associate Professor Ethan Goddard-Borger has investigated the proteins that regulate the thickness of mucus in the airways. Associate Professor Goddard-Borger is the Brian M Davis Charitable Foundation Centenary Fellow.
Redesigning insulin to improve diabetes therapies

New, ultra-fast-acting forms of insulin are in development that could help people with diabetes better manage their condition.

Clues from cone snails

Insulin is a life-saving therapy for many people with diabetes. People with type 1 diabetes, and in some stages of type 2 diabetes, don’t produce enough insulin, meaning their blood sugar levels can rise to dangerous levels. Injected insulin therapies allow a person with diabetes to control their blood sugar levels.

WEHI’s Professor Mike Lawrence and Dr John Menting have used structural biology to understand how different forms of insulin bind to the insulin receptor. Current insulin therapies are relatively slow to act, meaning some people with diabetes struggle to control their blood sugar levels.

“The venom of marine cone snails contains a remarkably fast-acting form of insulin. In 2016, along with our colleagues at the University of Utah, we observed how cone snail venom insulin could bind to manage their condition more easily, explaining how it can act so fast,” he said.

“This provided us with a ‘blueprint’ for modifying human insulin, so that it could act faster.”

A new form of insulin

The team developed a modified version of human insulin called ‘Mini-Ins’ that successfully mimics the ultra-fast-acting properties of cone snail venom insulin.

Professor Lawrence said he was delighted that Mini-Ins had shown promise in preclinical trials.

“Mini-Ins rapidly lowered blood sugar levels, was well-tolerated by the immune system and lacked any propensity for long-term side-effects – all of which are vital considerations when developing new treatments for diabetes,” he said.

Professor Lawrence said a future version of Mini-Ins could end up being used by patients around the world.

“This research may enable the development of a safe and effective insulin treatment that works even faster than the current gold standard.”

“Achieving this would help people with diabetes to manage their condition more easily, which would, in turn, lead to better health outcomes.”

Below: Mini-Ins (molecular structure shown below) are a modified, ultra-fast-acting form of insulin, that may lead to improved insulin therapies for diabetes.
Enhancing research through computational biology support

Computational biology and bioinformatics play a key role in fundamental and translational research at WEHI, applying mathematics, statistics and computer science to make sense of complex biomedical data and biological systems.

‘Tidying up’ analyses

Computational biology often relies on bespoke data analysis software. The programming language R is a widely used platform, enabling researchers to create new software packages to solve specific questions. Dr Stefano Mangiola has developed a series of bioinformatics analysis tools in R, which are enhancing how experimental data can be analysed. He said these are contained within the software suite ‘tidy transcriptomics’, which makes gene expression data easier to work with.

“In 2020, we developed software that makes it more intuitive for researchers to generate ‘heatmap’ visualisations of data. Also, data integration, manipulation and analysis reproducibility are facilitated by our newly designed software suite,” he said.

“I’ve also trained researchers from around the world in tidy transcriptomics – it’s fantastic to see how it is being applied to solve important questions!”

Bioinformatics support

In 2020, WEHI established a Bioinformatics Support Facility that provides advice and guidance to researchers across the institute in the design and analysis of experiments.

Head of the facility, Dr Alexandra Garnham, said the facility’s statisticians worked collaboratively with researchers at all stages of a project.

“Medical research is highly reliant on technologies and approaches that generate large volumes of data. Involving a statistician early in a project can enhance the ultimate interpretation of data and ensure reliable findings,” Dr Garnham said.

“We also work closely with researchers to ensure that data they have already collected can be rigorously and optimally analysed. Our facility has been playing an increasingly important role in a wide range of research discoveries.”

New research computing platform

With increasing amounts of biological data generated by experiments, and more complex computational methods required to analyse this data, WEHI’s reliance on high-performance computing has grown.

Research Computing provides researchers with access to suitable computer platforms and expertise to ensure the success of their research. It is a collaborative effort between WEHI’s Information Technology Services and the Research Computing Platform within the Computational Biology research theme.

Dr Evan Thomas, who established and leads the Research Computing Platform, said it was an important addition to WEHI’s research infrastructure.

“Our team of engineers works with individual researchers to help them to navigate computational challenges they may have. We also have a whole-organisation view that ensures WEHI’s computing systems keep pace with our requirements,” he said.
Professor Gordon Smyth recognised for bioinformatics achievements

The research contributions of WEHI’s joint Bioinformatics division head, Professor Gordon Smyth, were recognised in 2020 with Australian Bioinformatics and Computational Biology Society’s highest honour, an Honorary Senior Fellowship.

Professor Smyth is one of Australia’s most highly cited medical researchers, and has been named as a Web of Science Highly Cited Researcher every year since 2013 – reflecting the widespread impact of Professor Smyth’s research across a range of fields.

Professor Smyth said bioinformatics has been an exciting field to work in. “I started at WEHI in the same year as the publication of the human genome,” he said. “This gave me the opportunity to develop new analytical approaches for a range of complex data sets generated by the latest genomics technologies. I have had the privilege of working with many wonderful scientific collaborators to apply new technologies to solve a range of questions in basic biology as well as diseases including cancer, immunology and blood disorders.”

Among research that Professor Smyth contributed to in 2020 was the discovery that some breast cancers are susceptible to new anti-cancer agents (page 28), and the identification of a key regulator of immune B cell development (page 34).

Above: Professor Gordon Smyth
Observing the killer protein

Necroptosis is controlled by a protein called MLKL. A multidisciplinary team at WEHI, led by Associate Professor James Murphy, is examining how MLKL functions, with a goal of better understanding diseases involving necroptosis, and developing new treatments for these.

Dr Andre Samson used advanced imaging technologies to watch the MLKL protein in cells as they underwent necroptosis. He said this revealed how MLKL changed its location as necroptosis occurred. “We could see MLKL clumping and migrating to different parts of the cell as necroptosis progressed,” Dr Samson said.

“Intriguingly, activated MLKL gathered at the junctions between neighbouring cells – potentially enabling a dying cell to trigger necroptosis in surrounding cells, which could be a form of protection against infections.”

Variants suggest protein’s function

Dr Joanne Hildebrand and Dr Maria Kauppi examined the connection between changes in MLKL and inflammatory diseases. Dr Hildebrand said they identified a hyperactive variant of MLKL that triggered lethal inflammation in laboratory models.

“We discovered similar variants in the human MLKL gene are surprisingly common – about 10 per cent of human genomes from around the world encode more easily activated, inflammatory versions of MLKL,” she said.

“These variants of MLKL may be associated with human inflammatory diseases – but may also have offered an evolutionary benefit at some point of human history, perhaps helping people survive certain infectious diseases.”

A puzzling structure

The three-dimensional structures of MLKL in different vertebrate species were mapped by then PhD student Dr Katherine Davies. She said corresponding proteins found in different species typically had a similar structure that had been conserved during evolution.

“To our surprise, the structures of MLKL were quite different between different species – even between closely related species. This suggests evolutionary pressures such as infections may have driven substantial changes in MLKL,” she said.

“Together with the data for human variations in MLKL, this suggests MLKL is critical for cells to balance beneficial inflammation, which protects against infections, against harmful inflammation that causes inflammatory diseases.”

Associate Professor Murphy said the team – which has been studying MLKL for more than a decade – had made massive advances in the field of necroptosis research.

“This will provide an enormous boost to understanding a range of inflammatory diseases. We are already working to develop new medicines that could temper MLKL-driven inflammation as potential new treatments for a range of inflammatory diseases,” he said.

Shining a new light on inflammatory cell death

An inflammatory form of cell death called necroptosis protects our bodies from infections, but excessive necroptosis has been linked to conditions such as inflammatory bowel disease.

Above: Advanced imaging has been used to visualise cells undergoing necroptosis, showing how the dying cells (yellow) swell up and rupture.
International partnerships boost efforts to combat anaemia

WEHI researchers are working with international partners to develop better approaches to reduce the global burden of anaemia.

Preventing iron deficiency

More than 1.5 billion people worldwide have anaemia, meaning their blood contains too few oxygen-carrying red blood cells or haemoglobin. Anaemia can cause short- and long-term health consequences, particularly in children and pregnant women.

Iron deficiency is the most common cause of anaemia, and worldwide almost 40 per cent of pregnant women are iron deficient. Associate Professor Sant-Rayn Pasricha, a WEHI clinician-scientist, said iron deficiency and anaemia can have serious long-term health consequences in pregnant women and their children.

“We hope (this research) will lead to significant improvements in the health of women and children.”

“Iron deficiency can be cured by iron supplementation, but tragically this is not an option for many women and children,” he said. “Our team is working closely with our international partners to determine the best ways to deliver iron supplements in low- to middle-income countries, as a way of improving health.”

In 2020, an international research consortium led by Associate Professor Pasricha, which is investigating the impact of giving intravenous iron supplements to pregnant women, was awarded two major grants totalling more than AUD$16 million from the Bill & Melinda Gates Foundation.

“The funding will support large-scale, randomised clinical trials in Malawi and Bangladesh, examining whether the interventions could improve the health of the mothers and their babies,” Associate Professor Pasricha said.

“The collaboration brings together expertise from Melbourne, Bangladesh and Malawi to consider a range of physical, psychological and developmental health factors,” he said.

“We are honoured the Bill & Melinda Gates Foundation has chosen to fund this research, which we hope will lead to significant improvements in the health of women and children around the world,” he said.

Joining forces with the WHO

In 2020, the World Health Organization (WHO) designated WEHI the WHO Collaborating Centre for Anaemia Detection and Control. The new centre, led by Associate Professor Pasricha, enlists WEHI researchers to advise the WHO on the best approaches to diagnose and treat anaemia. This includes implementing better strategies to prevent iron deficiency, he said.

“Being able to diagnose anaemia, and to understand and manage its causes, can provide a critical boost to the health of people of all ages. Through the new WHO Collaborating Centre for Anaemia Detection and Control, our team will provide the most up-to-date, evidence-based advice to the WHO, to ensure global programs to combat anaemia are effective and relevant to the unique circumstances of different countries,” he said.

Above: A mother and her child in Bangladesh, who are participating in a WEHI-led trial of iron supplementation.
Revealing the genetic causes of neurological diseases

WEHI scientists contributed to a decades-long global effort to find the genetic mutations at the root of some rare, hereditary types of epilepsy and ataxia.

The mutations – called repeat expansions – are typically associated with neurological diseases, including ataxia, autism and familial adult myoclonic epilepsy (FAME).

Dr Haloom Rafehi, Dr Mark Bennett and Professor Melanie Bahlo developed highly specialised bioinformatics tools to identify repeat expansions, putting them at the forefront of the search for these rare disorders. The international consortium included clinicians, bioinformaticians and biologists from Australia and Europe.

Professor Bahlo said typical analysis methods could not detect repeat expansions, so they are often ignored as a cause of disease.

“We recently developed methods that revealed the genetic cause of ataxia in an Australian family. Many of these people had waited years – even generations – to know the cause of their disease and now, finally, they have an answer. Our discovery has led to a diagnostic test, which is providing important information to the members of this family,” she said.

In 2020, Dr Rafehi and Dr Bennett both received significant funding to continue their research: an Australian National Health and Medical Research Council (NHMRC) Investigator Grant for Dr Rafehi; and a CURE Epilepsy Taking Flight Award for Dr Bennett. Professor Bahlo received an NHMRC Investigator grant and was elected a Fellow of the Australian Academy of Health and Medical Sciences in recognition of her contributions to improving bioinformatics analyses of genetic diseases and identification of the causes of genetic diseases.
Elevated levels of inhibitor of apoptosis (IAP) proteins are one way diseased cells can escape apoptosis, allowing them to persist. Our researchers are investigating potential applications of drugs called Smac-mimetics, which target IAPs and reactivate apoptotic death.

Predicting breast cancer response

Cell death researcher Dr Najoua Lalaoui said clinical trials revealed cancer patients responded variably to Smac-mimetic drugs. “Working with breast cancer clinician-scientist Professor Geoff Lindeman, we examined whether Smac-mimetics could kill breast cancers. This revealed hard-to-treat ‘triple negative’ breast cancers were particularly sensitive to these drugs, suggesting these cancers could be ideal candidates for clinical trials of Smac-mimetics – potentially leading to better treatments,” Dr Lalaoui said.

“We wanted to understand why some breast cancers were more sensitive to Smac-mimetics. We worked with a bioinformatics team led by Professor Gordon Smyth to look for whether there was a pattern of genes that were switched on or off in sensitive – but not resistant – breast cancers,” she said.

The team uncovered a ‘gene signature’ that predicted which breast cancers would respond to Smac-mimetics, Dr Lalaoui said.

“Looking at the particular genes that were expressed in the gene signature has also given us clues about why these cancers were sensitive to Smac-mimetics,” Dr Lalaoui said. “We hope this gene signature could be used to identify other cancers that are sensitive to Smac-mimetics.”

Possible applications in malaria

Targeting IAPs could be a new way to treat malaria, according to research led by Associate Professor Justin Boddey, Dr Greg Ebert and Professor Marc Pellegrini. Using a preclinical model of malaria, they discovered *Plasmodium* parasites increase the amount of IAP proteins in liver cells, Associate Professor Boddey said.

“The liver is a significant site of parasite development and reproduction, being the first organ infected by the malaria parasite after a mosquito injects it into the body. By hijacking the cell death machinery in the liver cells, the parasites enable their survival and replication,” he said.

Inhibiting the IAPs with a Smac-mimetic drug killed liver cells infected with the *Plasmodium* parasite, Dr Ebert said.

“We discovered that only malaria parasite-infected liver cells – but not uninfected cells – responded to the Smac-mimetic. These drugs could provide a new approach to clear malaria parasites, potentially preventing illness and the spread of drug-resistant parasites,” he said.

Above: Dr Najoua Lalaoui revealed Smac-mimetics could provide a new treatment hope for hard-to-treat breast cancers.
Team effort drives stomach cancer discoveries

Understanding how stomach cancer develops and progresses to invasive stages could lead to much-needed, better treatments.

Pinpointing the culprits

More than 2000 Australians are diagnosed with stomach cancer each year. Sadly most cases are detected at late stages when treatment options are limited.

A team led by Dr Lorraine O’Reilly and Dr Tracy Putoczki investigated signalling molecules that may contribute to stomach cancer. They focused on inflammatory signalling, as there is a clear link between inflammation and stomach cancer, Dr O’Reilly said.

“Using a laboratory model of stomach cancer that we had developed, we measured the amounts of different inflammatory signalling molecules – called cytokines – to see which were present in stomach cancers as they developed and progressed. This revealed high levels of four key cytokines,” she said.

The next stage of the research was to inhibit these cytokines, and measure the impact on stomach cancer progression, said Dr Putoczki.

“We discovered that removing a cytokine called TNF could prevent early-stage stomach cancers from progressing to a more severe stage that, in humans, is much harder to treat,” she said.

“This was an exciting finding, as there are already medicines in clinical use that block TNF, most notably for the treatment of rheumatoid arthritis. Our research suggests these therapies could be an effective and safe way to prevent the progression of stomach cancer to more invasive forms.”

Boosted by consumer involvement

The involvement of research consumers – people who have lived experience of stomach cancer – was critical to the success of the research, Dr O’Reilly said.

“We valued the input of stomach cancer survivor Mr Frank Graham and his wife Ronnie, as well as Mrs Debra Clements, who nursed her husband through cancer. They conveyed to me the importance of considering current issues for cancer patients, such as early diagnosis and more effective targeted treatments. Their feedback helped me to refine the study design,” she said.

Dr O’Reilly also consulted with consumers about her application to Cancer Council NSW for research funding.

“Debra, Frank and Ronnie provided invaluable feedback on my grant application, helping me to successfully secure the essential support I needed to continue my research,” she said.

Mr Graham said that volunteering as a consumer at WEHI had changed his perspective on medical research.

“It’s my sincere hope that one day other people won’t have to go through what I’ve been through,” he said.

“I am incredibly optimistic about the future knowing there are people like Lorraine working behind the scenes to improve medical treatments and longer-term positive outcomes for people with stomach cancer.”

Below: Stomach cancer researcher Dr Lorraine O’Reilly (left) worked closely with stomach cancer survivor Mr Frank Graham (centre) and his wife and carer Ronnie (right).
EXCEPTIONAL SCIENCE AND PEOPLE

Royal Society honours breast cancer researcher

Breast cancer researcher Professor Jane Visvader was elected a Fellow of the United Kingdom’s Royal Society, one of only three Australians to receive this honour in 2020.

The award recognises Professor Visvader’s significant contributions to breast cancer research and developmental biology, which have revealed how the breast is formed from stem cells, and the relationship between normal breast cells and cancer. Her research has underpinned the development of better ways to treat and prevent breast cancer, some of which are now in clinical trials.

Professor Visvader said she was honoured to join the Royal Society. “The society has promoted excellence in science for more than 350 years, and I am very humbled to be elected to a fellowship that includes many scientific luminaries,” she said.

“I’d like to emphasise that my achievements have been shared with many people – in particular my longstanding scientific partner Professor Geoff Lindeman, as well as our many collaborators and all the talented researchers who have been part of our team.

“I’d also like to acknowledge the significant government and philanthropic funding support that has enabled me to focus on my research,” Professor Visvader said.

Above: Professor Jane Visvader
Improving therapies for people with rare cancers

Though individually uncommon, collectively rare cancers account for almost one in three cancer deaths in Australia. The Stafford Fox Rare Cancer Program aims to improve the outcomes of people with rare cancers by developing better ways to match individual patients with effective treatments for their disease.

A significant challenge

Although few people may have a particular type of rare cancer, altogether there are many types of rare cancer, said Professor Clare Scott, a clinician-scientist who jointly leads the Stafford Fox Rare Cancer Program.

“Rare cancers are a significant health burden in Australia and globally. People with rare cancers often lack access to effective treatments,” she said.

“Preclinical and clinical research has led to significant advances in the treatment of more common cancers, but research can be challenging to undertake for individual rare cancer types – both because of the scarcity of patients and lack of funding. Our program seeks to use innovative technologies like genomics to develop new approaches to identify effective treatments for rare cancer patients.”

Clues in the genes

As part of the Stafford Fox Rare Cancer Program, Professor Tony Papenfuss and Dr Justin Bedo – who holds the Stafford Fox Centenary Fellowship in bioinformatics – have led the establishment of a new way to analyse the genomes of rare cancers. Professor Papenfuss said genomic data could potentially identify suitable treatments.

“All cancers are driven by certain genetic changes. By analysing individual patients’ cancers, we can detect which cancer-associated genes have been disrupted – and can also see patterns in which genes are being used (expressed) by the cancer,” he said.

“This data can be matched to other cancers with similar genetic changes or gene expression patterns, giving critical, evidence-based clues as to which treatments might be effective.”

Clinical-grade analysis software

Dr Bedo said the team had developed software that enabled bioinformatics analyses of rare cancer genomes to be performed with the highest standards of reproducibility.

“Traditional bioinformatic analyses of cancer genomes have been limited by factors such as complexities in integrating different software packages, managing how data transfers from one system to another, and intensive research computing requirements,” he said.

“Our program has developed a better approach to analysing individual rare cancer patients’ genomes, in a highly reproducible and accurate way. The next step is to use this data to select appropriate therapies. If preclinical testing of this approach looks promising, we hope to see our bioinformatics pipeline assisting in clinical trials for rare cancer patients using genomics-led selection of treatments.”

Below: Stafford Fox Centenary Fellow Dr Justin Bedo (right) with Stafford Fox Medical Research Foundation trustee Mr Paul Brotchie (centre) and his wife Ms Susan Sandford (left)
Research into cell survival proteins guides new therapies

A promising class of anti-cancer therapies called BH3-mimetics target the ‘BCL-2-like’ pro-survival proteins that help cancer cells stay alive and grow.

Eliminating suspects

Understanding which pro-survival proteins keep particular cancer cells alive can allow that cancer to be matched with an appropriate BH3-mimetic drug therapy.

Blood cancer researcher Dr Gemma Kelly said many B-cell lymphomas had been reported to have high levels of a BCL-2-like protein called BCL-W, suggesting this protein may promote the cancer cells' survival.

“This led to speculation that drugs targeting BCL-W could be useful for treating B-cell lymphomas,” she said.

Dr Kelly and Dr Sarah Diepstraten used CRISPR gene-editing technology to ablate BCL-W in B-cell lymphomas grown in the laboratory.

“We discovered these cells can survive without BCL-W, dismissing this protein as a potential therapeutic target for these particular lymphomas. It is likely that other pro-survival proteins are much more important in these blood cancers,” Dr Diepstraten said.

Preventing collateral damage

Dr Kerstin Brinkmann, Dr Stephanie Grabow and Professor Andreas Strasser investigated another BCL-2-like protein called BCL-XL, which many cancer cells rely on for their survival.

Dr Brinkmann said it was well known that BCL-XL inhibitors could deplete platelets, a serious side-effect that has limited their development as potential cancer treatments.

“We used genetic tools to investigate whether other cell types had a similar reliance on BCL-XL for their survival. This revealed BCL-XL helps kidney cells stay alive when exposed to chemotherapy or radiotherapy.”

Despite concerns about the toxicity of BCL-XL inhibitors, Dr Brinkmann said there may be ways they could be safely used.

“In a laboratory model, we found short-term treatment with a BCL-XL inhibitor could be safely combined with chemotherapy or radiotherapy – raising a potential approach of using BCL-XL inhibitors to sensitise cancer cells to established therapies.”

Accolades for leukaemia researcher

Clinician-scientist Professor Andrew Roberts AM is joint head of WEHI’s Cancer Research and Treatments theme and Metcalf Chair of Leukaemia Research at the University of Melbourne. He has led landmark studies of how blood cancer cells can be killed by BH3-mimetics and how these drugs can be used to treat people with specific leukaemias and lymphomas.

Professor Roberts’ contributions to cancer research and his service to haematology and cancer organisations were recognised in 2020 with several awards: appointment as a Member of the Order of Australia; election to the Australian Academy of Science; and jointly winning the Ramaciotti Medal for Excellence in Biomedical Research with his colleague at Royal Melbourne Hospital and Peter MacCallum Cancer Centre, Professor John Seymour.

Professor Roberts said he was honoured by the recognition. “I want to pay tribute to, and thank, the very many people that I have worked with in a team effort to improve the lives of people afflicted with cancer,” he said. “The most rewarding aspect of my research is seeing blood cancer patients benefiting from new therapies.”

Above: Professor Andrew Roberts AM is a clinician-scientist whose research has led to better therapies for people with blood cancers.
Advanced technologies add new cell to immune family tree

Powerful ‘single cell multi-omics’ technologies have driven the discovery of a previously unknown ancestor of T and B lymphocytes, which are critical cells in our immune system. The research, undertaken through WEHI’s Single Cell Open Research Endeavour (SCORE) facility, discovered a previously unrecognised cell type that could give rise to T and B lymphocytes, but not other immune cells, Dr Shalin Naik said.

“This cell occurred much earlier in lymphocyte development than we had suspected. Understanding in more detail how T and B lymphocytes develop could lead to better approaches to regenerate these cells as a treatment for certain diseases, such as immune disorders or leukaemia,” Dr Naik said.

Multi-omics technologies combine different biological data sets – such as genomics, transcriptomics and proteomics – to compare different samples in more detail than is possible by looking at one data set, Dr Daniela Zalcenstein said.

“Rather than looking at data combined from many cells in a sample, we focus in on individual cells to understand the differences that exist within a larger population,” she said. “We have applied this approach to study individual cells, in this case developing immune cells, to understand in more detail which cells can give rise to lymphocytes. This approach is called single cell multi-omics.”

Dr Zalcenstein said this was one of the first projects tackled by SCORE, and demonstrated the power of applying new technologies to well-studied fields of research.

“SCORE is now tackling more than 100 different research questions – it’s a really exciting field to be involved with,” she said.

Above: Multi-omics researchers (from left) Ms Sara Tomei, Dr Shalin Naik, Dr Daniela Zalcenstein and Mr Luyi Tian
In search of the origins of blood cells

Specific proteins control the development of blood cells – including many immune cells – from stem cells. Understanding this process has explained how blood disorders, including cancers, arise.

### Initiating B-cell development

B cells produce antibodies that provide immunity to infections. Each B cell produces only one type of antibody, through a complicated process of gene rearrangement of antibody genes within the cell. This process is critical for immune ‘memory’ and long-lasting protection against infection.

Blood cell researcher Dr Ashley Ng said that, despite a detailed understanding of the stages of B cell development, it was still not clear which proteins facilitated transition from one stage to the next.

“We looked at the role of a protein called Erg in B-cell development,” Dr Ng said. “Erg is a ‘transcription factor’, meaning it is responsible for binding to other genes and switching them on and off.”

He said preliminary data suggested Erg had the potential to influence B-cell development. By deleting Erg in developing B cells, Dr Ng was able to pinpoint its role.

“In early B cells, we showed Erg was essential for initiating antibody gene rearrangement, by switching on two other important ‘regulatory’ genes and working with them in turn to instigate antibody gene rearrangement,” Dr Ng said.

“With this valuable new information, I will now investigate how this transcription factor network is required in other contexts, such as leukaemia development.”

### Platelet formation visualised

A separate study used advanced imaging technologies to reveal how platelets – tiny cells in the blood that enable clotting – are formed in our bodies. Dr Samir Taoudi, who jointly led the research team, said that while platelets were known to be produced from large precursor cells called megakaryocytes, this had only ever been visualised using cells grown in the laboratory.

“Relying on this highly artificial setting has spawned several theories about how platelets are formed. Recent advances in three-dimensional imaging mean that we could watch platelets developing within blood-forming organs from the embryo through to adulthood. This provided definitive evidence that platelets form by ‘budding’ from megakaryocytes at a steady rate,” Dr Taoudi said.

As well as answering a longstanding question about how platelets are formed, the research could help improve supplies of platelets used as a treatment for blood clotting disorders.

“Currently platelet transfusions are derived from blood donations, and this can lead to shortages: platelets cannot be stored for long periods, so platelet supplies are reliant on a constant supply of donated blood.

“We hope that a better understanding of how platelets form within the body could lead to better strategies for generating large volumes of platelets in the laboratory for clinical use,” he said.

Below: Advanced imaging has been used to observe platelets (small yellow shapes indicated by arrows) ‘budding’ from a large cell (also shown in yellow) called a megakaryocyte.
Complex interactions

Autoimmune and inflammatory diseases – in which the immune system mistakenly attacks and inflames the body’s own tissues – affect five per cent of Australians, while 11 per cent of Australians have asthma, an inflammatory condition affecting the airways that is also linked to the immune system.

Immune diseases are thought to be caused by complex interactions between a person’s genetic risk and their exposure to environmental triggers, making these conditions challenging to understand. WEHI research spans studies of the fundamental biology of the immune system through to translational research using patient samples, and trials of new therapies that prevent misdirected immune responses.

Valuable samples

Access to tissue or blood samples from people with a particular disease is an invaluable resource for translational research.

With the consent of the patient, biobanks can store routinely collected blood or tissues, making them available to researchers into the future. WEHI joint head of Clinical Translation and rheumatologist, Professor Ian Wicks, said well-organised biobanks were an invaluable resource for translational research.

“Having a biobank of samples from people with immune and inflammatory diseases – conditions such as rheumatoid arthritis, psoriasis and inflammatory bowel disease – alongside accurate clinical information could provide a massive boost to translational research. We hope to find better biomarkers, integrate genomics and work towards more personalised therapy in immune and inflammatory diseases. We’ve already seen a similar impact of the Victorian Cancer Biobank on translational cancer research,” he said.

Professor Wicks and Dr Charlotte Slade, who are both clinician-scientists at WEHI and The Royal Melbourne Hospital (RMH), have worked with colleagues across several specialities at RMH, including Dr Johannes Kernes (dermatology), Dr Britt Christensen (inflammatory bowel diseases) and Dr Peter Hughes (renal medicine), to establish the Victorian Immune Diseases Biobank.

A boost to immunology research

Dr Slade established a laboratory at WEHI in 2020 with the support of the Sir Clive McPherson Family Centenary Fellowship. She said the biobank would be an important boost to her research, which investigates the underlying genetic causes of complex immune diseases.

“The Victorian Immune Diseases Biobank will be an incredibly valuable tool for a range of studies that focus on developing better diagnostic and therapeutic approaches for these conditions. It will be particularly important for validating biomarkers or molecular pathways before commencing clinical trials,” Dr Slade said.

“We hope that translational research involving the biobank will bring significant benefits to people living with immune and inflammatory diseases.”

Above: Clinician-scientist Dr Charlotte Slade established a laboratory at WEHI in 2020, investigating the genetic causes of immune disorders.
EXCEPTIONAL SCIENCE AND PEOPLE

New hope for halting motor neurone disease

WEHI researchers are working towards a potential treatment to slow the progression of motor neurone disease (MND), offering hope to people with this debilitating illness.

An inflammatory STING

Motor neurone disease (MND) is an incurable condition caused by a failure of the nerves controlling the muscles that enable us to move, speak, swallow and breathe. One in 10,000 Australians will be diagnosed with MND in their lifetime and the average life expectancy from diagnosis is just two years.

MND is caused in part by inflammation, which irreparably damages nerve cells, said Associate Professor Seth Masters who led research with Dr Alan Yu, in collaboration with the University of Melbourne and the Hudson Institute of Medical Research.

“Our research has focused on the earliest stages of how inflammation is triggered, then identifying links to disease progression,” Associate Professor Masters said.

“In this study we discovered that an immune sensor protein called STING – which we had already studied in other inflammatory diseases – is a critical driver of inflammation in MND. This was an exciting discovery, because we could then test drug-like inhibitors of STING signalling, as a first step towards potential new anti-inflammatory therapies,” he said.

When the team tested these inhibitors in the laboratory using cells taken from people with MND, they found they could prevent inflammation and keep the cells alive longer. They were also able to confirm that STING was activated in people who had died from MND.

Potential new therapies

Most people suffering from MND have an accumulation of a protein called TDP-43 within cells of the central nervous system, which triggers an inflammatory response.

Dr Yu said the team was able to ‘connect the dots’ to discover how STING was activated by high levels of TDP-43.

“We are now working to validate a biomarker of the pathway that could be detected early in the disease progression. Once this neuroinflammatory biomarker is validated, we will better understand which patients will benefit the most from treatments targeting the pathway,” Dr Yu said.

Associate Professor Masters said he hoped this research could lead to better treatments for people with established MND, who currently have very few treatment options.

“While new anti-inflammatory therapies are unlikely to cure MND, we hope they might extend life expectancy and dramatically improve quality of life for people diagnosed with MND, and potentially other neurogenerative disorders involving inflammation,” he said.

Below: Dr Alan Yu (left) and Associate Professor Seth Masters (right) have discovered a protein that drives inflammation in motor neurone disease.
Accelerating the hunt for antibody-based medicines

Antibody-based medicines are ‘biologics’ derived from the proteins used by our immune system to fight infection. These drugs are already in clinical use for certain inflammatory conditions, as well as cancer.

There has been intense interest in the development of antibody-based medicines to treat infections such as COVID-19 – including at WEHI (see pages 14 to 15), said Ms Kathleen Zeglinski. She was the winner of the Colman-Speed Medal in 2020, which is presented each year to WEHI’s top Honours student.

“My project investigated how we can use a new technology, called Nanopore long read sequencing, to accelerate the discovery of new antibody-based medicines,” she said.

Ms Zeglinski, who was supervised by WEHI’s Associate Professor Matt Ritchie and CSL’s Dr Arthur Hsu, studied samples generated by a collaborative team led by Associate Professor Wai-Hong Tham that is developing antibody-based medicines for COVID-19.

“It was the first time Nanopore sequencing had been applied to antibody discovery, so there was a lot of fine-tuning required, both in the lab and in the bioinformatic analyses,” Ms Zeglinski said.

“It was an uphill battle, but we were able to get our method working accurately. We revealed promising antibody candidates that reflected the antibodies that are seen in people with COVID-19. It was exciting to be working in such a rapidly evolving field.”

Ms Zeglinski has continued her research at WEHI, starting a PhD in 2021. “In the long run I’d love to go overseas to do a postdoc – hopefully international travel will be possible by then!”
2020 Graduates

Students are highly valued members of our research groups, and some will go on to become the future leaders of our sector. Our students receive world-class training in medical research and broader career skills, which equips them for a range of careers in the health and medical research sector and other fields.

Congratulations to the following students who successfully completed their studies this year.

**Doctor of Philosophy, University of Melbourne**

**Dr Suad Abdirahman**
Dr Tracy Putoczki, Associate Professor Oliver Sieber
Establishing pre-clinical models for advanced colorectal cancer

**Dr Maria Bergamasco**
Professor Anne Voss, Associate Professor Tim Thomas
Assessing the role of histone acetylation during development

**Dr Katherine Davies**
Associate Professor Peter Czabotar, Associate Professor James Murphy, Dr Emma Petrie
Mechanistic studies of MLKL-mediated cell death

**Dr Caleb Dawson**
Professor Jane Visvader, Professor Geoff Lindeman
Investigation of mammary gland development and resident macrophages

**Dr Tirta (Mario) Djajawi**
Professor David Huang, Dr Mark van Delft
Control of the intrinsic pathway of apoptosis

**Dr Siavash Foroughi**
Professor Peter Gibbs, Associate Professor Jeanne Tie, Professor Tony Burgess
Optimising colorectal cancer therapies using clinical registries

**Dr Wasan Forsyth**
Professor Marc Pellegrini, Dr Greg Ebert
Manipulation of host signalling for the characterisation and control of dengue fever

**Dr Denise Heckmann**
Professor John Silke, Dr Najoua Lalaoui, Associate Professor Andrew Webb, Dr Jarrod Sandow
Understanding the molecular mechanisms of AML development and treatment using phosphoproteomics

**Dr Valentin Heim**
Dr Ueli Nachbar, Professor John Silke
Study of endogenous NOD signalling mechanisms using affinity tag knock-in mice

**Dr Stephanie Hyslop**
Dr Emma Josfesson, Professor Warren Alexander
Investigating the role of platelets in lung cancer

**Dr Alexandra Gurzau**
Associate Professor James Murphy, Professor Marnie Blewitt
Functional and structural characterisation of the epigenetic regulator SMCHD1

**Dr Isabella Kong**
Associate Professor Edwin Hawkins, Professor Phil Hodgkin, Associate Professor Rhyia Allan, Dr Stephen Vervoort
Manipulating the humoral immune response using epigenetic modifiers

**Dr Erin Lawrence**
Associate Professor Marco Herold, Professor Andreas Strasser, Associate Professor Andrew Wei
The role of mutant DNMT3a in ageing and in the regulation of normal and malignant haematopoiesis

**Dr Lin Liu**
Professor John Silke, Dr Najoua Lalaoui
Characterization of new regulators in TNFR1-mediated death signalling

**Dr Zikou Liu**
Professor John Silke, Dr Joanne Hildebrand, Associate Professor James Murphy
Investigation of MLKL ubiquitylation during necroptosis

**Dr Shih-Jung (Zoe) Liu**
Professor Ivo Mueller, Dr Rhea Longley
*Plasmodium vivax* naturally acquired immunity: patterns and influences

**Dr Jonas Moeccking**
Associate Professor Seth Masters, Professor Matthias Geyer (Bonn)
Investigating the molecular basis of human NLRP1 inflammasome activation

**Dr Rhiannon Morris**
Associate Professor Jeff Babon, Professor Doug Hilton
Molecular control of haematopoiesis via the JAK-STAT signalling pathway

**Dr Emma Morrish**
Professor John Silke, Dr Gabriela Brumatti
Smac-mimetic combination therapies for the treatment of cancer and infectious disease

**Dr Ksenija Nesic**
Professor Clare Scott, Dr Matthew Wakefield
Exploiting DNA repair defects in high-grade serous ovarian carcinoma

**Dr Maria Ome-Kaius**
Professor Leanne Robinson, Professor Ivo Mueller, Dr Sophie Zaloumis, Professor Stephen Rogerson
Low birthweight and infant growth among children in Papua New Guinea - effect of malaria and other infectious diseases during childhood

**Dr Anna Quagliieri**
Professor Terry Speed, Professor Melanie Bählo, Associate Professor Ian Majewski
Using transcriptomics to study relapse in acute myeloid leukaemia

**Dr Kitsanapong Reaksudsan**
Professor Alan Cowman, Dr Tony Hodder
Aspartic proteases and their potential for transmission blocking strategies

**Dr Simona Seizova**
Associate Professor Chris Tonkin, Associate Professor Justin Boddey
The molecular dissection of host manipulation by *Toxoplasma gondii* bradyzoites

**Dr Charlotte Slade**
Dr Vanessa Bryant, Professor Phil Hodgkin, Dr Susanne Heinzl, Professor Jo Douglass
Investigating the genetic causes of primary immunodeficiency and autoimmunity

**Dr Katherina Stracke**
Associate Professor Aaron Jex, Associate Professor Harin Karunajeewa
Diagnostics and impacts of soil-transmitted helminth infections among populations from South-East Asia

**Dr Digijaya Utama**
Associate Professor Alyssa Barry, Professor Ivo Mueller, Associate Professor Diana Hansen
Host-parasite interactions in the pathogenesis of severe *Plasmodium falciparum* malaria

**Dr James Whittle**
Professor Jane Visvader, Professor Geoff Lindeman
Cell survival pathways and mechanisms of response in breast cancer

**Dr Jie Zhou**
Professor Phil Hodgkin, Associate Professor Edwin Hawkins, Professor David Tarlinton
Intracellular competition regulates B lymphocyte differentiation
**Master of Philosophy, University of Melbourne**

Ms Bethany Davey  
Dr Brad Sleebs, Professor Alan Cowman  
Characterisation of the *Plasmodium* aspartyl proteases DNA-damage inducible protein 1 (DDI1) and Plasmepsin VII (PMVII)

**Master of Research, University of Melbourne**

Mr Kaiyuan Guo  
Associate Professor Wai-Hong Tham, Dr Kelly Rogers  
Characterisation of plasmepsin X as a cross-species antimalarial target

Ms Jingyu (Jean) Jiang  
Professor Alan Cowman, Associate Professor Sant-Rayn Pasricha  
Development of an editable approach to the study parasite-erythroid interactions

Mr Bolong Wu  
Professor John Silke, Dr Gabrielle Brunatti  
Identification of new regulators of TNFR1-induced necroptotic pathway

Ms Yuyan (Shirley) Yang  
Dr Cynthia Louis, Professor Ian Wicks, Dr Angus Stock  
GM-CSF regulation in inflammatory arthritis

**Bachelor of Science (Honours) or Bachelor of Biomedicine (Honours), University of Melbourne**

Ms Tianwei Chen  
Associate Professor Marie-Liesse Asselin-Labat, Dr Clare Weeden, Associate Professor Daniel Gray  
Targeting pro-survival proteins to promote anti-tumour immunity in lung adenocarcinoma

Mr Edward Dann  
Professor Phil Hodgkin, Associate Professor Daniel Gray, Dr Mark Dowling  
Calculating cell death: a quantitative theory of cell control in lymphocytes

Ms Emily Derrick  
Associate Professor Ian Majewski, Dr Rebecca Bilardi  
Mapping DNA repair networks in cancer

Mr Sebastian Hughes  
Associate Professor James Vince, Dr Maryam Rashidi, Associate Professor Seth Masters  
Investigating cell death and inflammasome activation in XIAP deficiency

Mr Alex Lam  
Associate Professor Aaron Jex, Dr Samantha Emery  
Exploring a novel microbial natural product library to reveal novel anti-protistal compounds

Ms Nipuni Padukkage  
Professor Ian Wicks, Dr Katherine Martin  
Investigating the function of Huntingtin Interacting Protein-1 in Neutrophil Biology

Mr Raymond Qin  
Dr Joanna Groom, Dr Kelly Rogers, Dr Niall Geoghegan  
Establishing experimental and analytical pipelines for three-dimensional leukocyte migration research

Mr Josh Steiner  
Dr Melissa Call, Associate Professor Matthew Call  
Establishing the activating mechanisms for three small molecule thrombopoietin receptor (TpoR) agonists via deep mutational scanning

Mr Jack Tovey  
Dr Jacqui Gubbi, Dr Agalya Periasamy, Dr Katrina Black  
Investigation of 7W: a novel braunvirinae bacteriophage models of infection and resistance

Ms Kathleen Zeglinski  
Associate Professor Matt Ritchie, Dr Arthur Hsu  
Applications of long-read sequencing for antibody discovery in the biopharmaceutical industry
Patents Granted in 2020

Patents protect unique inventions made by WEHI scientists. These facilitate collaborations between WEHI and commercial organisations to progress the development of new products, a key step towards clinical translation.

Patents ensure that WEHI is able to leverage its intellectual property for future financial benefits. Income received for commercial exploitation of institute intellectual property is then used to invest in further research and reward the researchers who contributed to the invention.

Apoptosis-inducing agents for the treatment of cancer and immune and autoimmune diseases
Brazil, Indonesia, Mexico, Poland, Serbia, Switzerland, Vietnam

Aryl sulfonohydrazides
Inventors: J Baell, B Cleary, H Lagiakos, D Leaver, N Nguyen, B Sheikh, T Thomas, A Voss
United States

Barley with low levels of hordeins
Inventors: C Howitt, G Tanner
Japan

CD52 glycoprotein
Inventors: E Bandala Sanchez, E Goddard-Borger, L Harrison, N Packer, A Shathili
Australia

Oat avenin purification method
Inventor: G Tanner
Australia

Method of treating intracellular infection
Inventors: C G Begley, G Ebert, M Pellegrini
Canada, France, Germany, Italy, Japan, New Zealand, Russia, Spain, United Kingdom

Soluble mediator
Inventors: E Bandala Sanchez, J Dromey, L Harrison, M Rashidi, Y Zhang
France, Germany, India, Italy, South Korea, Spain, United Kingdom

Use of therapeutic agents
Inventors: L Coultas, G Dewson, E Watson
Australia, France, Germany, Italy, Ireland, Spain, Switzerland, United Kingdom
A remarkable place

WEHI’s Building Services Manager Mr Mahbub Bhuiyan (left) and Reception Coordinator Ms Rosie Falcone (right) were recognised for their professionalism, commitment and resilience at the front line of the institute in 2020, being jointly awarded WEHI’s 2020 Kellaway Excellence Director’s Award.
Operational overview

WEHI’s activities are guided by our 2019-2023 Strategic Plan. While the COVID-19 pandemic impacted WEHI’s operations, our response was guided by our long-term strategic vision and our commitment to staff and student safety, wellbeing, productivity and connectedness.

Enabling great science and supporting a vibrant workforce were two focuses for 2020 – albeit under changing workplace conditions. You can learn more about WEHI’s operational responses to COVID-19 on page 44.

Support from our community

Our community has always been an integral part of WEHI’s research: philanthropists and governments have been vital supporters of our scientists; consumers contribute to our research; and WEHI’s goal is to see our discoveries translated into better health outcomes for our community. The wide-ranging interest in COVID-19 research, plus WEHI’s new brand (see pages 4 and 5), presented opportunities to raise awareness and support for WEHI. In response, we received funding support from existing and new donors. Throughout the year, online platforms were key to engaging with our supporters to provide updates on WEHI’s work.

WEHI’s Centenary Fellowships program successfully concluded in 2019, raising more than $46 million to support WEHI’s most promising researchers and projects. As WEHI enters a new phase of fundraising, our activities will be guided by the implementation of a new fundraising and philanthropy strategy.

Streamlining grant applications

WEHI has initiated a new program to provide targeted, structured and strategic support to researchers applying for National Health and Medical Research Council (NHMRC) funding. This program leverages the wealth of expertise within WEHI to guide applicants, ensuring they have the best chance of successfully securing funding in a highly competitive environment.

In addition, applying for competitive grant funding – particularly scarce government funding – is time-consuming for researchers and takes them away from vital lab work. And once grant funding is secured, transparent, rigorous and responsive management of funding streams and grant obligations is required to ensure all grant requirements are met.

WEHI’s new Grant Management System, launched in 2020, streamlines administrative and reporting obligations to ensure grant funding is managed transparently and responsibly, while also allowing our scientists to maximise their time devoted to research rather than administration.

Enhancing collaborations, strengthening connections

WEHI’s links to healthcare providers, clinicians and patients are key to making a difference to the health of Australians. We have been strengthening our relationships with hospitals in order to increase WEHI’s capacity for discovery and translational research. Initiatives included a partnership with Western Health to embed research tissue coordinators and extend our clinical collaborations in cancer research, and the development of a new program to better attract and retain clinician-scientists at WEHI.

The Consumer Advisory Panel Strategic Plan was also developed to keep WEHI at the forefront of consumer engagement in medical research and to deliver even better outcomes for researchers and the community.

Productive partnerships enhance research

WEHI has a strong track record in the early capture of intellectual property and commercialisation of our research. We work closely with biopharmaceutical partners, both locally and globally, to pursue the clinical testing and translation of our discoveries, and realise the health impacts of our research. Commercial and royalty returns are a significant source of income for WEHI and help us fund more research that contributes to better health outcomes for the community.

By 2020, more than 30 projects had been commercialised, five of which had resulted in marketed innovative products while a further eight are now at the clinical trials stage. WEHI was also granted 35 patents in 2020 (see page 40), ensuring we retain control of our promising research discoveries. WEHI’s Innovation Fund supports internal early-stage innovation, bridging a critical funding gap in research translation and increasing the number of projects that can be successfully commercialised. In 2020, five projects were progressed through the Innovation Fund.

Strengthening our technology-driven research

During 2020, we developed a number of technology-driven initiatives to enhance multi-disciplinary research for discovery and translation. Initiatives included an imaging strategy and genomics strategy, which will be implemented in 2021. Planning for the Centre for Biologics Discovery was also completed, which will provide a pipeline of antibodies and nanobodies for the development of therapeutics, diagnostics and tools for discovery research.
Ensuring responsible governance

During 2020, WEHI continued to expand our governance capabilities to ensure we meet our regulatory responsibilities and stakeholder and community expectations. This included the appointment of two new roles, one to support animal management and one to expand our in-house corporate legal resourcing. To support good governance and ensure transparency we have continued to develop and refine our policies, including a focus in 2020 on developing policies that supported WEHI’s COVID response (see page 44).

We continue to focus on continually improving processes. In 2020, we reviewed both our risk and compliance frameworks. Findings from these reviews will be implemented in 2021.

A key element of good governance is ensuring that staff feel safe to raise concerns. In 2020, we introduced a whistleblower hotline to provide an avenue for the anonymous reporting of concerns, consistent with newly introduced whistleblower legislation.

We continue to refine our systems and procedures to ensure our research is conducted at the highest ethical standard. This included the refinement of the Animal Management System, a database developed at WEHI to support compliance, track animal usage, husbandry and breeding, incorporating animal ethics oversights and reporting.

Embedding environmental sustainability

WEHI is motivated to foster a culture of environmental sustainability as well as to meet related obligations in its operations. In 2020, the Environmental Management and Sustainability Committee was established, comprising diverse representation of WEHI staff and students. This committee will develop an Environmental Management and Sustainability Strategy that will guide WEHI’s actions in areas including energy, water and waste management, sustainable procurement practices, and compliance with relevant environmental legislation. The committee will also advocate internally for environmental initiatives, and raise awareness of environmental sustainability among WEHI’s staff and students.

Preparing WEHI for the future

As part of its long-term planning, WEHI undertook the ‘Strategic Futures’ project in 2020. The project was designed to enable WEHI to anticipate and prepare for the longer-term future. It included a series of surveys and workshops engaging external stakeholders, including the Board and alumni, along with WEHI staff and students. The workshops explored the preferred vision for WEHI in the year 2040 and identified key areas where change is required now to reach this vision. Working groups will be established to further explore the emerging themes and create recommendations prior to the development of the 2024-2028 Strategic Plan.

Below: WEHI’s Chief Operating Officer Ms Carolyn MacDonald
Responding to the COVID-19 pandemic

WEHI swiftly adapted its operations to meet the many challenges posed by the pandemic.

WEHI’s response to the pandemic was guided by our values and strategic goals, and centred on the following priorities:

- providing a safe environment for our staff and students to work both onsite and at home;
- complying with all government requirements relating to the pandemic;
- safeguarding the health of the broader WEHI community, as well as the general community;
- ensuring we meet the highest standards of ethical conduct of research, especially in relation to the use of animals in research;
- minimising the impact of our changed operations on WEHI’s long-term financial position and business continuity; and
- applying our research expertise to tackle COVID-19 (see pages 14-17) and, where possible, supporting ongoing non-COVID-19 research – including honouring funding and collaborative agreements.

A new way of working

To combat potential infection spread at our sites, WEHI implemented a range of hygiene measures and contact tracing systems, as well as supporting staff and students to work partially or completely from home. At the height of the pandemic in Victoria, onsite work was limited to essential workers, who at WEHI were a skeleton workforce of critical researchers (such as those undertaking COVID-19 research) and essential professional services staff.

For many years, WEHI has facilitated flexible working arrangements, but a substantial cross-organisational response was required to support and engage with our staff and students in 2020. The pandemic also led to changes in how WEHI engages with our community. The 2020 Annual General Meeting was among many events held online for the first time.

Supporting our people

The wellbeing of our staff and students was central to our COVID-19 response. Staff who were not permitted onsite, but could not fully complete their work duties from home, were financially supported by a new category of ‘Pandemic Leave’.

WEHI also worked closely with the University of Melbourne to ensure our students received appropriate support, including allowing extensions to students’ candidature and scholarships if their research progress had been impacted by the pandemic. WEHI also provided interim employment for PhD graduates who were unable to take up planned overseas employment.

Supporting the mental wellbeing of our staff and students was also a priority for WEHI. In addition to our long-term Employee Assistance Program, a workplace psychologist was employed by WEHI for several months.

In 2021, WEHI’s COVID-19 response has continued to adapt to the ongoing pandemic, and we hope the rollout of COVID-19 vaccines will reduce the need for harsher workplace restrictions to be imposed again.

Above: COVID-19 researchers Dr Emily Eriksson (left) and Dr Vanessa Bryant (right)
Expanding connections with our alumni

In 2020, WEHI held alumni events both in person and online, which offered audiences a variety of ways to network with peers and reconnect with WEHI.

Our alumni are an important part of the WEHI community and are great ambassadors. The alumni relations program is continually seeking ways to engage alumni with WEHI’s ongoing research work and achievements.

The program also creates opportunities for alumni to rekindle old friendships, share memories and catch up with current staff and students.

Staying informed

Following a highly successful parasitology reunion held in person at the Parkville campus in February, COVID-19 restrictions forced the program to rethink how we bring alumni together.

With WEHI researchers working towards better approaches to diagnose, treat and prevent the spread of coronaviruses, we held an online forum in July for alumni and supporters to learn about our COVID-19 research program (see pages 14 to 17).

At the forum, WEHI director Professor Doug Hilton spoke about how WEHI has prioritised our research during the pandemic. Professor Marc Pellegrini, who leads WEHI’s COVID-19 research program, summarised the multifaceted research approach WEHI had taken to combat this disease; Dr Kym Lowes spoke about how WEHI researchers were using the National Drug Discovery Centre to uncover potential new therapeutics.

The forum aimed to provide a platform to build goodwill for WEHI amongst our alumni in the wider community. An alumna said it helped her better understand WEHI’s research. “The forum clearly presented WEHI’s scientific findings; there was a great Q&A session afterwards,” she said.

Keeping in touch

In October, the alumni program ran an online reunion for former Honours students. One alumnus commented on the value of reconnecting with past colleagues. “Most of the ex-students knew each other, regardless of when they studied at WEHI, and were happy to chat, especially during a pandemic,” he said.

Our alumni receive a special alumni-focused edition of WEHI’s quarterly newsletter, Illuminate. They can also engage with WEHI on a dedicated Facebook page, and receive email updates on key activities including the Annual General Meeting, annual report and events throughout the year.

By shifting to a mix of in-person and online events, the alumni program has been able to offer more alumni the opportunity to engage with WEHI; in 2020 we engaged with 205 alumni at events, an increase from 129 in 2019.

With the recruitment of new alumni to the network in 2020, our alumni program has become a key aspect of WEHI’s ongoing community engagement.

Below: More than 50 alumni, staff and students who worked in WEHI’s parasitology research program gathered for a reunion in February 2020 (prior to the introduction of COVID-19 restrictions).
Diversity and inclusion

WEHI embraces and celebrates diversity amongst our people and recognises the importance of a positive, inclusive workplace culture to the success of our organisation.

Fostering inclusion during the pandemic

In 2020, we sought to understand and address the range of ways in which the COVID-19 pandemic impacted different groups of staff and students. We drew upon the diverse voices and experiences of our people to guide WEHI’s response to the pandemic, striving to remain an inclusive, connected workplace.

Future of flex

The pandemic accelerated changes to the ‘how, when and where’ of work. Staff and students at WEHI reported that they valued the greater flexibility they had to manage their work-life balance and wanted to see this maintained in the future.

An online workshop was held in September to start to explore the ‘future of flex’ at WEHI. The workshop included a panel discussion with faculty members and discussions centred upon participant experiences of working during lockdown, and the barriers and enablers to WEHI continuing to embrace flexibility.

Supporting parents and carers during COVID-19

During Victoria’s lockowns, many children could not attend on-site schooling and childcare. WEHI commenced a partnership with KidsCo to support parents and carers during Stage 4 lockdowns. KidsCo is a school holiday program that developed a range of live online sessions designed to engage children from five to 12 years of age. The partnership saw WEHI offer 24 places per day for children of staff and students.

Progressing gender equality

The four-year Gender Action Plan 2018-2021 (GAP), developed as part of our application for the Bronze Athena SWAN award, has acted as a roadmap to gender equality at WEHI.

2020 saw the continued implementation of the GAP, and WEHI’s sustained participation in the Science in Australia Gender Equality (SAGE) Athena SWAN program.

Valuing collaboration

WEHI has maintained and strengthened partnerships, both locally and nationally, through membership of the Champions of Change Coalition (formerly known as the Male Champions of Change) and Women in Science Parkville Precinct (WiSPP).

WEHI is also a member of the new Association of Australian Medical Research Institutes (AAMRI) Gender Equality, Diversity and Inclusion Committee, helping to shape and advance gender and diversity work within the medical research sector.

Celebrating International Women’s Day

WEHI was honoured to welcome Ms Carly Findlay OAM to deliver our 2020 International Women’s Day address.

Ms Findlay writes on disability and appearance diversity issues and received a Medal of the Order of Australia (OAM) in 2020 for her work as a disability advocate and activist.

Addressing WEHI’s staff and students, Ms Findlay spoke about the importance of inclusion, visibility and hearing the voices of people with a disability, particularly with regard to the medical sector.

Encouraging bystander action against sexism and sexual harassment

WEHI was one of two Victorian workplaces selected to join a partnership with VicHealth and independent research organisation the Behavioural Insights Team (BIT) to trial innovative interventions to encourage bystander action against sexism and sexual harassment in the workplace. The Victorian Government-funded partnership will produce a set of evidence-based recommendations on how to best respond to and prevent sexism and sexual harassment.

Acknowledging the 16 Days of Activism against gender-based violence campaign

WEHI acknowledged the 16 Days of Activism campaign against gender-based violence by sharing key messages with staff and students, and through WEHI’s social media accounts. Content shared internally focused on explaining the purpose of the campaign, guidance on how to access workplace support for victims and survivors of violence, and tips for how to be a bystander against disrespect towards women.

Promoting LGBTQIA+ inclusion

WEHI proudly participated in the 2020 Midsumma Pride March. WEHI director Professor Doug Hilton led the WEHI contingent in solidarity with WEHI’s LGBTQIA+ staff, students and allies.

WEHI acted as the host entity for QueersInScience, a grassroots advocacy organisation for LGBTQIA+ people in science, technology, engineering, mathematics and medicine (STEMM), supporting their efforts as they expanded the network nationally.
WE-Pride: Supporting and connecting the LGBTQIA+ community

WE-Pride, WEHI’s LGBTQIA+ employee-led network, continued to act as a source of connection and support to LGBTQIA+ staff and students during the pandemic, with regular virtual meetups scheduled. WE-Pride organised and led an online workshop between members of LGBTQIA+ networks at organisations across the Parkville precinct and wider Melbourne academic community to share key learnings and ideas for running successful networks.

To mark 2020’s International Day Against Homophobia, Transphobia and Biphobia (IDAHOBIT) and to break stereotypes pigeonholing the LGBTQIA+ community, WE-Pride members took part in a photo collage of their daily activities including work and diverse hobbies such as reading, baking, travelling, gardening, knitting and bird-watching.

In August, the WEHI community was invited to celebrate Wear it Purple Day, aimed at celebrating and supporting LGBTQIA+ young people. Because of COVID-19 restrictions, the WEHI Student Association organised a virtual games night and made a donation to the Wear it Purple charity in honour and recognition of WEHI’s LGBTQIA+ students. WE-Pride marked this day by re-sharing the Queeries video, in which WEHI’s staff and students answered questions related to challenges faced by the LGBTQIA+ community.

In December, in an attempt to bring LGBTQIA+ community and allies together, WE-Pride hosted an end-of-year picnic, the first in-person social event since COVID-19 restrictions eased.

Increasing disability awareness and inclusion

WEHI supported an employee-led initiative to set up a Disability Reference Group. The group’s aims will be guided by staff and students but may focus on areas such as peer support, improving access, awareness raising and policy guidance.

WEHI became a member of the Australian Network on Disability (AND), which works to improve access and inclusion for people with a disability in the workplace.

Below: Award-winning writer, speaker and appearance activist Ms Carly Findlay OAM delivered WEHI’s 2020 International Women’s Day address.
Working towards reconciliation

WEHI’s Reconciliation Action Plan provides a clear framework to help shape our reconciliation agenda and take us on the next stage of our reconciliation journey.

Fellowship for Indigenous researchers

In early 2020, WEHI launched a new Indigenous Visiting Research Fellowship program to provide funding support for Aboriginal and Torres Strait Islander researchers to undertake research at the institute. The fellowship aims to support Aboriginal and Torres Strait Islander researchers to leverage the expertise of a WEHI laboratory and associated research infrastructure to advance their research and develop their scientific skills and experience.

Creating opportunities for Aboriginal and Torres Strait Islander students

WEHI participates in internship programs that provide opportunities for Aboriginal and Torres Strait Islander students. In November, nine undergraduate students were welcomed through the CareerTrackers Indigenous Internship Program to undertake summer internships across our scientific divisions and in professional services. This is the largest cohort of students hosted at WEHI since the institute joined CareerTrackers in 2014.

WEHI also continued its partnership with the Aurora internship program with two university students interning in our laboratories in 2020.

In addition, WEHI staff were provided with the opportunity to mentor early university students who are part of the Young Indigenous Women’s STEM Academy (YIWSA).

Supporting Deadly Science

WEHI’s Reconciliation Committee ran a book drive to support Deadly Science’s efforts to provide STEM resources to support Aboriginal and Torres Strait Islander school students across Australia. More than 450 books were donated and sent to eight schools.

Acknowledging National Reconciliation Week

2020 marked the 20th anniversary of Reconciliation Australia, an important shared effort to build a more just, equitable and reconciled nation.

From 27 May to 3 June, with many in our workforce still working from home, the Reconciliation Committee shared digital content, connecting staff and students to WEHI’s commitment to reconciliation and instigating wider discussions on Aboriginal and Torres Strait Islander history, culture and achievements. These included live interviews, pre-recorded seminars, virtual art tours and maps of local heritage sites.

Celebrating NAIDOC Week

WEHI was privileged to celebrate NAIDOC week with a special seminar by three Aboriginal women health and medical research academics. WEHI’s Associate Professor Misty Jenkins hosted the seminar with guest speakers Associate Professor Catherine Chamberlain and Dr Ngaree Blow titled ‘From the bush to the bench and back to the bush’.

Above: During the 2019–20 summer, WEHI hosted five CareerTrackers interns, (from left) Ms Bridget Dorizzi, Ms Naomi Jones, Ms Megan Kent, Ms Lilly Backshell and Mr Wayne Cawthorne.
Organisation and governance

Ms Joh Kirby is WEHI’s Head of Governance, Risk and Compliance. She leads a team that support researchers, professional services and the Board through the delivery of integrated governance practices.
WEHI Board
The directors of the Walter and Eliza Hall Institute of Medical Research Board
31 December 2020

WEHI Board members 2020 (from left): Mr Terry Moran AC, Ms Marie McDonald, Mr Peter Collins, Professor Shitij Kapur, Professor Sir John Savill, Mrs Jane Hemstritch, Mr John Dyson, Professor James McCluskey AO, Mr Robert Wylie, Associate Professor Pippa Connolly, Mr Malcolm Broomhead AO.

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FCAEW FCAANZ FAICD
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Appointed President: May 2019

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BA (Hons) LaTrobe FIPAA
Appointed: November 2013
Appointed Vice President: May 2019

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Mr Robert Wylie
FCA FAICD
Appointed: April 2014
Appointed Honorary Treasurer: April 2014

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MCD Masters Oxford and HEC Paris
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Appointed: April 2019

Mr John Dyson
BSc Monash Grad Dip Fin Inv SIA
MBA RMIT
Appointed: May 2016

Professor Shitij Kapur
MBBS AIIMS PhD Toronto FRCPC FMedSci
Appointed: May 2017
Retired from Board: 16 December 2020

Professor Christine Kilpatrick AO
MBBS MBA MD DMedSci (Hons) Melbourne
FRACP FRACMA FAICD FAHMS
Appointed: May 2017
Board members not present in group photograph: Professor Christine Kilpatrick AO (top right) and Ms Carolyn Viney (bottom right).

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BMedSc MBBS MD UWA FRACP  
FRCPA FAA FAHMS  
Appointed: April 2011

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FRCP FRCPE FRCSEd (Hon) FRCPCH(Hon)  
FASN FRSE FMedSci FRS  
Appointed: June 2018

**Ms Marie McDonald**  
BSc (Hons) LLB (Hons) Melbourne  
Appointed: October 2016

**Ms Carolyn Viney**  
LLB/BA Monash  
Appointed: December 2016
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Animal Ethics Committee
Appointment and Promotion Review Committee
Biosafety Committee
Clinical Translation Standing Committee
Diversity and Inclusion Committee
Education Committee
Engagement Committee
Environmental Management and Sustainability Committee
Faculty Recruitment and Appointment Committee

Gender Equity in Science Committee
Health and Safety Committee
IT Governance Committee
Project Governance Committee
Reconciliation Committee
Risk Management Committee
Senior Technology Planning Group
Strategic Cabinet

Deputy Director,
Science Strategy
Professor Alan Cowman AC

Acting Head,
Scientific Education
Professor Marnie Blewitt

Theme: Immunology
Associate Professor Rhys Allan
Dr Vanessa Bryant
Associate Professor Daniel Gray
Dr Joanna Groom
Professor Phil Hodgkin
Associate Professor Misty Jenkins
Dr Shalin Naik
Professor Stephen Nutt
Dr Charlotte Slade
Associate Professor Jason Tye-Din

Theme: Infectious Diseases and Immune Defence
Associate Professor Justin Boddey
Professor Alan Cowman AC
Dr Anna Coussens
Associate Professor Diana Hansen
Professor Marc Pellegrini
Associate Professor Wai-Hong Tham
Associate Professor Chris Tonkin

Theme: Inflammation
Dr Philippe Bouillet
Associate Professor Edwin Hawkins
Associate Professor Seth Masters
Associate Professor James Murphy
Associate Professor Sandra Nicholson
Professor John Sike
Associate Professor James Vince
Professor Ian Wicks

Theme: Imnuneology

Theme: Infectious Diseases and Immune Defence
Professor Phil Hodgkin

Theme: Infectious Diseases and Immune Defence
Professor Marc Pellegrini

Associate Professor Wai-Hong Tham
Associate Professor Chris Tonkin

Immunology
Associate Professor Rhys Allan
Dr Vanessa Bryant
Associate Professor Daniel Gray
Dr Joanna Groom
Professor Phil Hodgkin
Associate Professor Misty Jenkins
Dr Shalin Naik
Professor Stephen Nutt
Dr Charlotte Slade
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Professor Tony Burgess
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Dr Tracy Putoczki
Associate Professor Oliver Sieber

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Associate Professor Sant-Rayn Pasricha

Associate Professor Leanne Robinson

Associate Professor Rosie Watson
Associate Professor Nawaf Yassi

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Dr Berhard Lechtenberg

Clinical Translation
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Professor Ian Wicks

Colonial Foundation
Healthy Ageing Centre
Associate Professor Andrew Webb

National Drug Discovery Centre
Dr Jeff Mitchell

Deputy Director,
Science Strategy
Professor Alan Cowman AC

Acting Head,
Scientific Education
Professor Marnie Blewitt
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Dr Mark Wickham
Mr David Williamson
Mr Malcolm Williamson
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Mr Peter Worcester
Mr Rob Wylie
Dr Quan Zhao

WEHI remembers those members who passed away in 2020
Dr Gytha Betheras AM
WEHI acknowledges the support of the following organisations, which contributed $10,000 or more to our research in 2020

[Logos of various organisations]
WEHI is associated with the following organisations:

In-kind support was received from:
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- Ms Karen O’Duil (minutes)

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- Professor Alan Cowman AC
- Mr Steve Droste
- Professor Doug Hilton AO
- Ms Carolyn MacDonald
- Mr Dan McLennan (Partner Developments)
- Mr Terry Moran AC
- Ms Catherine Parker
- Mrs Emma Booth (minutes)

#### Remuneration and Nomination Committee
- Mr Terry Moran AC (chair)
- Ms Marie McDonald
- Ms Carolyn Viney
## Financial statements contents

### NOTE

<table>
<thead>
<tr>
<th>Note</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Statement of profit or loss and other comprehensive income</td>
<td>61</td>
</tr>
<tr>
<td>2. Statement of financial position</td>
<td>63</td>
</tr>
<tr>
<td>3. Statement of cash flows</td>
<td>64</td>
</tr>
<tr>
<td>4. Statement of changes in equity</td>
<td>65</td>
</tr>
<tr>
<td>5. Statement of significant accounting policies</td>
<td>66</td>
</tr>
<tr>
<td>6. Operating revenue</td>
<td>73</td>
</tr>
<tr>
<td>7. Other Income</td>
<td>73</td>
</tr>
<tr>
<td>8. Operating expenses</td>
<td>73</td>
</tr>
<tr>
<td>9. Venetoclax monetisation</td>
<td>73</td>
</tr>
<tr>
<td>10. Directors’ remuneration</td>
<td>74</td>
</tr>
<tr>
<td>11. Auditors’ remuneration</td>
<td>74</td>
</tr>
<tr>
<td>12. Current tax assets</td>
<td>74</td>
</tr>
<tr>
<td>13. Trade and other receivables</td>
<td>74</td>
</tr>
<tr>
<td>14. Operating expenses</td>
<td>75</td>
</tr>
<tr>
<td>15. Other financial assets</td>
<td>76</td>
</tr>
<tr>
<td>16. Property, plant and equipment</td>
<td>77</td>
</tr>
<tr>
<td>17. Trade and other payables</td>
<td>77</td>
</tr>
<tr>
<td>18. Provisions</td>
<td>77</td>
</tr>
<tr>
<td>19. Unearned grants and fellowships</td>
<td>77</td>
</tr>
<tr>
<td>20. Other liabilities</td>
<td>77</td>
</tr>
<tr>
<td>21. Capital movements</td>
<td>78</td>
</tr>
<tr>
<td>22. Notes to statement of cash flows</td>
<td>79</td>
</tr>
<tr>
<td>23. Right of use assets</td>
<td>80</td>
</tr>
<tr>
<td>24. Economic dependency</td>
<td>80</td>
</tr>
<tr>
<td>25. Segment information</td>
<td>80</td>
</tr>
<tr>
<td>26. Capital expenditure commitments</td>
<td>80</td>
</tr>
<tr>
<td>27. Related party disclosures</td>
<td>80</td>
</tr>
<tr>
<td>28. Superannuation commitments</td>
<td>81</td>
</tr>
<tr>
<td>29. Financial instruments</td>
<td>82</td>
</tr>
<tr>
<td>30. Jointly controlled operations and assets</td>
<td>84</td>
</tr>
<tr>
<td>31. Concessionary leases</td>
<td>85</td>
</tr>
<tr>
<td>32. Contingent liability</td>
<td>85</td>
</tr>
<tr>
<td>33. Events after the reporting period</td>
<td>85</td>
</tr>
<tr>
<td>34. Governance Statement</td>
<td>86</td>
</tr>
<tr>
<td>35. Directors report</td>
<td>87</td>
</tr>
<tr>
<td>36. Auditor’s independence declaration</td>
<td>90</td>
</tr>
<tr>
<td>37. Independent auditor’s report</td>
<td>91</td>
</tr>
<tr>
<td>38. Statistical summary</td>
<td>94</td>
</tr>
<tr>
<td>39. Capital funds</td>
<td>95</td>
</tr>
<tr>
<td>40. The year at a glance</td>
<td>98</td>
</tr>
</tbody>
</table>
Statement of profit or loss and other comprehensive income for the year ended 31 December 2020

<table>
<thead>
<tr>
<th>Government revenue</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Health and Medical Research Council</td>
<td>40,087</td>
<td>39,708</td>
</tr>
<tr>
<td>Cooperative Research Centres</td>
<td>1,386</td>
<td>2,451</td>
</tr>
<tr>
<td>Other Australian Government grants</td>
<td>23,316</td>
<td>4,139</td>
</tr>
<tr>
<td>Other Australian Government fellowships</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Victorian Government grants</td>
<td>10,311</td>
<td>10,513</td>
</tr>
<tr>
<td>Foreign Government grants and fellowships</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td><strong>Total government revenue</strong></td>
<td>75,109</td>
<td>56,881</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other grant revenue</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial grants and contracts</td>
<td>13,439</td>
<td>8,689</td>
</tr>
<tr>
<td>Philanthropic grants and fellowships – Australia</td>
<td>9,870</td>
<td>13,399</td>
</tr>
<tr>
<td>Philanthropic grants and fellowships – International</td>
<td>4,649</td>
<td>3,343</td>
</tr>
<tr>
<td><strong>Total other grant revenue</strong></td>
<td>27,958</td>
<td>25,431</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other revenue</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment income</td>
<td>19,996</td>
<td>24,156</td>
</tr>
<tr>
<td>Royalty income</td>
<td>1,654</td>
<td>7,483</td>
</tr>
<tr>
<td>General income</td>
<td>6,842</td>
<td>8,916</td>
</tr>
<tr>
<td>Donations and bequests</td>
<td>11,569</td>
<td>10,373</td>
</tr>
<tr>
<td><strong>Total other revenue</strong></td>
<td>40,061</td>
<td>50,926</td>
</tr>
</tbody>
</table>

**Total operating revenue before monetisation**

<table>
<thead>
<tr>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>143,128</td>
<td>133,240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Royalty monetisation income (venetoclax)</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>38,961</td>
<td>35,633</td>
</tr>
</tbody>
</table>

**Total operating revenue**

<table>
<thead>
<tr>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>182,089</td>
<td>168,873</td>
</tr>
</tbody>
</table>

The financial statements are to be read in conjunction with the notes to, and forming part of the financial statements.
<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating expenditure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific laboratories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>$67,601</td>
<td>$61,389</td>
</tr>
<tr>
<td>Apparatus and equipment</td>
<td>$3,178</td>
<td>$2,576</td>
</tr>
<tr>
<td>Consumable supplies</td>
<td>$9,131</td>
<td>$11,065</td>
</tr>
<tr>
<td>Other expenses</td>
<td>$3,961</td>
<td>$5,881</td>
</tr>
<tr>
<td></td>
<td>$83,871</td>
<td>$80,911</td>
</tr>
<tr>
<td>Support laboratories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>$14,125</td>
<td>$13,355</td>
</tr>
<tr>
<td>Apparatus and equipment</td>
<td>$900</td>
<td>$989</td>
</tr>
<tr>
<td>Consumable supplies</td>
<td>$1,347</td>
<td>$1,287</td>
</tr>
<tr>
<td>Other expenses</td>
<td>$1,695</td>
<td>$1,637</td>
</tr>
<tr>
<td></td>
<td>$18,067</td>
<td>$17,268</td>
</tr>
<tr>
<td>Professional services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>$13,898</td>
<td>$11,432</td>
</tr>
<tr>
<td>Furniture &amp; equipment</td>
<td>$74</td>
<td>$97</td>
</tr>
<tr>
<td>Building operating costs and maintenance</td>
<td>$5,092</td>
<td>$5,908</td>
</tr>
<tr>
<td>Other expenses</td>
<td>$6,202</td>
<td>$6,308</td>
</tr>
<tr>
<td></td>
<td>$25,266</td>
<td>$23,745</td>
</tr>
<tr>
<td>Strategic initiatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>$6,923</td>
<td>$12,165</td>
</tr>
<tr>
<td>Furniture &amp; equipment</td>
<td>$20</td>
<td>$105</td>
</tr>
<tr>
<td>Other expenses</td>
<td>$8,451</td>
<td>$3,976</td>
</tr>
<tr>
<td></td>
<td>$15,394</td>
<td>$16,246</td>
</tr>
<tr>
<td>Allowance for credit loss (decrease) / increase</td>
<td>9</td>
<td>($30)</td>
</tr>
<tr>
<td>Unrealised foreign exchange loss</td>
<td></td>
<td>$10,282</td>
</tr>
<tr>
<td><strong>Total operating expenditure before monetisation</strong></td>
<td></td>
<td>$152,850</td>
</tr>
<tr>
<td>Royalty monetisation (venetoclax)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for net commercial income distributions and associated payments</td>
<td>5</td>
<td>$2,239</td>
</tr>
<tr>
<td><strong>Total operating expenditure</strong></td>
<td></td>
<td>$155,089</td>
</tr>
<tr>
<td>Surplus from operations</td>
<td></td>
<td>$27,000</td>
</tr>
<tr>
<td>Other (loss)/income</td>
<td>3</td>
<td>($135)</td>
</tr>
<tr>
<td>Depreciation and amortisation - property, plant and equipment</td>
<td>4</td>
<td>($11,818)</td>
</tr>
<tr>
<td>Depreciation and amortisation - right of use assets</td>
<td>18</td>
<td>($53)</td>
</tr>
<tr>
<td>Gain/(loss) on financial assets taken to profit or loss (FVTPL Instruments)</td>
<td></td>
<td>$816</td>
</tr>
<tr>
<td>Bequests and grants for capital works</td>
<td></td>
<td>$15,626</td>
</tr>
<tr>
<td><strong>Net surplus for the period</strong></td>
<td>16(a)</td>
<td>$31,436</td>
</tr>
<tr>
<td><strong>Other comprehensive income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items that will not be reclassified subsequently to profit or loss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain/(loss) on financial assets taken to equity (FVTOCI equity Instruments)</td>
<td>16(g)</td>
<td>68</td>
</tr>
<tr>
<td>Transfer derecognition of Land Lease (PPE) on initial adoption of AASB 16</td>
<td>16(c)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Items that may be reclassified subsequently to profit or loss</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain/(loss) on financial assets taken to equity (FVTOCI debt Instruments)</td>
<td>16(g)</td>
<td>322</td>
</tr>
<tr>
<td>Cumulative gain reclassified to profit or loss on sale of financial assets (FVTOCI Debt Instruments)</td>
<td>16(g)</td>
<td>137</td>
</tr>
<tr>
<td><strong>Total comprehensive income for the year</strong></td>
<td></td>
<td>$31,963</td>
</tr>
</tbody>
</table>

The financial statements are to be read in conjunction with the notes to, and forming part of the financial statements.
### Statement of financial position as at 31 December 2020

<table>
<thead>
<tr>
<th>Assets</th>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>17(a)</td>
<td>70,442</td>
<td>69,982</td>
</tr>
<tr>
<td>Current tax assets</td>
<td>8</td>
<td>1,281</td>
<td>1,240</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>9</td>
<td>57,454</td>
<td>51,311</td>
</tr>
<tr>
<td>Prepayments</td>
<td></td>
<td>2,254</td>
<td>1,670</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td></td>
<td>131,431</td>
<td>124,203</td>
</tr>
<tr>
<td><strong>Non-current assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other financial assets</td>
<td>10</td>
<td>561,431</td>
<td>547,641</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>11</td>
<td>196,314</td>
<td>183,919</td>
</tr>
<tr>
<td>Right of use assets</td>
<td>18</td>
<td>2,683</td>
<td>2,736</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td></td>
<td>760,428</td>
<td>734,296</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td></td>
<td>891,859</td>
<td>858,499</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>12</td>
<td>18,479</td>
<td>10,087</td>
</tr>
<tr>
<td>Provisions</td>
<td>13</td>
<td>37,448</td>
<td>37,852</td>
</tr>
<tr>
<td>Unearned grants and fellowships</td>
<td>14</td>
<td>45,627</td>
<td>49,931</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>15</td>
<td>330</td>
<td>264</td>
</tr>
<tr>
<td><strong>Total current liabilities</strong></td>
<td></td>
<td>101,884</td>
<td>98,134</td>
</tr>
<tr>
<td><strong>Non-current liabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions</td>
<td>13</td>
<td>32,511</td>
<td>34,864</td>
</tr>
<tr>
<td><strong>Total non-current liabilities</strong></td>
<td></td>
<td>32,511</td>
<td>34,864</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td></td>
<td>134,395</td>
<td>132,998</td>
</tr>
<tr>
<td><strong>Net assets</strong></td>
<td></td>
<td>757,464</td>
<td>725,501</td>
</tr>
<tr>
<td><strong>Funds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent invested funds</td>
<td>16(b)</td>
<td>202,322</td>
<td>198,833</td>
</tr>
<tr>
<td>General funds</td>
<td>16(c)</td>
<td>394,285</td>
<td>371,193</td>
</tr>
<tr>
<td>Royalty fund</td>
<td>16(d)</td>
<td>56,135</td>
<td>55,039</td>
</tr>
<tr>
<td>Leadership fund</td>
<td>16(e)</td>
<td>28,927</td>
<td>27,965</td>
</tr>
<tr>
<td>Discovery fund</td>
<td>16(f)</td>
<td>5,484</td>
<td>5,271</td>
</tr>
<tr>
<td>Investment revaluation reserve</td>
<td>16(g)</td>
<td>70,311</td>
<td>67,200</td>
</tr>
<tr>
<td><strong>Total funds</strong></td>
<td></td>
<td>757,464</td>
<td>725,501</td>
</tr>
</tbody>
</table>

The financial statements are to be read in conjunction with the notes to, and forming part of the financial statements.
## Statement of cash flows for the year ended 31 December 2020

<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td><strong>Cash flows from operating activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations and bequests</td>
<td>11,599</td>
<td>10,311</td>
</tr>
<tr>
<td>General income</td>
<td>8,389</td>
<td>10,071</td>
</tr>
<tr>
<td>Receipts from granting bodies</td>
<td>104,139</td>
<td>124,754</td>
</tr>
<tr>
<td>GST paid to ATO</td>
<td>(5,727)</td>
<td>(3,232)</td>
</tr>
<tr>
<td>Payments to suppliers and employees</td>
<td>(144,051)</td>
<td>(150,797)</td>
</tr>
<tr>
<td>Royalty receipts</td>
<td>37,309</td>
<td>1,673</td>
</tr>
<tr>
<td>Dividends received</td>
<td>13,399</td>
<td>23,172</td>
</tr>
<tr>
<td>Interest and bill discounts received</td>
<td>7,363</td>
<td>7,514</td>
</tr>
<tr>
<td><strong>Net cash from operating activities</strong></td>
<td>32,420</td>
<td>23,466</td>
</tr>
<tr>
<td><strong>Cash flows from investing activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment for other financial assets</td>
<td>(104,000)</td>
<td>(73,538)</td>
</tr>
<tr>
<td>Proceeds on sale of other financial assets</td>
<td>83,978</td>
<td>58,139</td>
</tr>
<tr>
<td>Grants and donations for property, plant and equipment</td>
<td>14,953</td>
<td>5,076</td>
</tr>
<tr>
<td>Payment for property, plant and equipment</td>
<td>(24,246)</td>
<td>(12,335)</td>
</tr>
<tr>
<td><strong>Net cash used in investing activities</strong></td>
<td>(29,315)</td>
<td>(22,658)</td>
</tr>
<tr>
<td><strong>Cash flows from financing activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations and bequests to permanent invested funds</td>
<td>673</td>
<td>1,359</td>
</tr>
<tr>
<td><strong>Net cash from financing activities</strong></td>
<td>673</td>
<td>1,359</td>
</tr>
<tr>
<td><strong>Net increase in cash and cash equivalents</strong></td>
<td>3,778</td>
<td>2,167</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents at the beginning of the year</strong></td>
<td>69,163</td>
<td>67,473</td>
</tr>
<tr>
<td>Effects of exchange rate changes on the balance of cash held in foreign currencies</td>
<td>(2,829)</td>
<td>(477)</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents at the end of the year</strong></td>
<td>70,112</td>
<td>69,163</td>
</tr>
</tbody>
</table>

The financial statements are to be read in conjunction with the notes to, and forming part of the financial statements.
Statement of changes in equity

<table>
<thead>
<tr>
<th>Permanent fund</th>
<th>General fund</th>
<th>Royalty fund</th>
<th>Leadership fund</th>
<th>Discovery fund</th>
<th>Investment revaluation reserve</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 1 January 2019</td>
<td>194,181</td>
<td>377,710</td>
<td>48,054</td>
<td>26,557</td>
<td>4,961</td>
<td>8,211</td>
</tr>
<tr>
<td>Transfer derecognition of Land Lease (PPE) on initial adoption of AASB 16</td>
<td>-</td>
<td>(16,182)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transfers not reflected in current year surplus</td>
<td>-</td>
<td>1,908</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(1,908)</td>
</tr>
<tr>
<td>Surplus for the year</td>
<td>4,652</td>
<td>7,757</td>
<td>6,985</td>
<td>1,408</td>
<td>310</td>
<td>-</td>
</tr>
<tr>
<td>Other comprehensive income for the year</td>
<td>-</td>
<td>1,908</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Revaluation gain on investments for the period</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total comprehensive income / (loss) for the year</td>
<td>4,652</td>
<td>(6,517)</td>
<td>6,985</td>
<td>1,408</td>
<td>310</td>
<td>58,989</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permanent fund</th>
<th>General fund</th>
<th>Royalty fund</th>
<th>Leadership fund</th>
<th>Discovery fund</th>
<th>Investment revaluation reserve</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 31 December 2019</td>
<td>198,833</td>
<td>371,193</td>
<td>55,039</td>
<td>27,965</td>
<td>5,271</td>
<td>67,200</td>
</tr>
<tr>
<td>Transfers from Investment revaluation reserve on sale of investment</td>
<td>-</td>
<td>(2,584)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,584</td>
</tr>
<tr>
<td>Surplus for the year</td>
<td>3,489</td>
<td>25,676</td>
<td>1,096</td>
<td>962</td>
<td>213</td>
<td>-</td>
</tr>
<tr>
<td>Other comprehensive income for the year</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Revaluation gain on investments for the period</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total comprehensive income for the year</td>
<td>3,489</td>
<td>23,092</td>
<td>1,096</td>
<td>962</td>
<td>213</td>
<td>3,111</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permanent fund</th>
<th>General fund</th>
<th>Royalty fund</th>
<th>Leadership fund</th>
<th>Discovery fund</th>
<th>Investment revaluation reserve</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at 31 December 2020</td>
<td>202,322</td>
<td>394,285</td>
<td>56,135</td>
<td>28,927</td>
<td>5,484</td>
<td>70,311</td>
</tr>
</tbody>
</table>

The financial statements are to be read in conjunction with the notes to, and forming part of the financial statements.
Notes to the annual accounts for the year ended 31 December 2020

1. Statement of significant accounting policies

The Walter and Eliza Hall Institute of Medical Research (‘WEHI’) is incorporated in Victoria as a company limited by guarantee. WEHI has 227 members and the guarantee is limited to two dollars per member.

The financial statements include all the activities of The Walter and Eliza Hall Institute of Medical Research.

The principal address of WEHI is:
1G Royal Parade
Parkville, Victoria, 3052

(a) Statement of compliance

This general purpose financial report has been prepared in accordance with the Australian Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board, International Financial Reporting Standards (IFRS) and the Australian Charities and Not-for-profits Commission Act 2012. WEHI is a not-for-profit entity and is exempt from taxation.

The financial report has been prepared on a going concern basis using historical cost conventions, except for certain financial instruments, which have been measured at fair value. Cost is based on the fair values of consideration given in exchange for assets.

WEHI has assessed the impact that the Coronavirus (COVID-19) pandemic has had, or may have on the financial statements based on known information. There does not currently appear to be either any significant impact upon the financial statements or any significant uncertainties with respect to events or conditions which may impact WEHI’s ongoing financial viability as at the reporting date or subsequently as a result of the pandemic.

The financial report is presented in Australian dollars, which is WEHI’s functional and presentation currency. WEHI is a company of the kind referred to in ASIC Corporations (Rounding in Financial/Directors’ Reports) Instrument 2016/191 dated 24 March 2016, and in accordance with that Class Order amounts in the financial report are rounded to the nearest thousand dollars, unless otherwise indicated.

The financial statements were authorised for issue by the directors on 29 March 2021.

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

(b) Source of capital funds

WEHI is a company limited by guarantee and as such has no issued capital.

(i) Permanent Invested Funds originate from gifts and bequests, the income from which is applied as stipulated by the donor, or to general research where there is no specific stipulation. These gifts and bequests are appropriated to Capital Funds.

(ii) General Funds consist of the net accumulation of surpluses and deficits of prior years.

(iii) The Royalty Fund consists of the balance of royalties received in respect of patented inventions and not expended.

(iv) The Leadership Fund consists of donations and income earned thereon. The Leadership Fund was established in honour of Professors Gustav Nossal, Donald Metcalf, Jacques Miller and Suzanne Cory to provide named fellowships to nurture the development of outstanding young scientists with the potential to be future leaders of biomedical research.

(v) The Discovery Fund consists of donations and income earned thereon, less funds spent on research to date. The Fund was established by WEHI to support specialist research and will be applied based on the merits of submissions to WEHI Director. There are three areas of focus: early drug discovery, blue sky basic biological research and technical innovation.

(vi) The Investment Revaluation Reserve consists of gains and losses recognised through movement in the fair value of investments and other financial assets.

(c) Revenue recognition

WEHI recognises income from its main revenue/income streams, as listed below:

- Research grants
- Infrastructure grants
- Donations and bequests
- Capital grants - buildings and equipment
- Royalty Income
- Sales of goods/services

Research grants, Infrastructure grants, donations and bequests

When WEHI receives government grants, donations and bequests that are within the scope of AASB 1058 (being a transaction where the consideration paid to acquire an asset is significantly less than fair value principally to enable WEHI to further its objectives), it performs an assessment to determine if the contract is ‘enforceable’ and contains ‘sufficiently specific’ performance obligations.

In cases where there is an ‘enforceable’ contract with a customer with ‘sufficiently specific’ performance obligations, the transaction is accounted for under AASB 15 where income is recognised when (or as) the performance obligations are satisfied.

In all other cases (where the contract is not ‘enforceable’ or the performance obligations are not ‘sufficiently specific’), the transaction is accounted for under AASB 1058, unless where WEHI has recognised this under AASB 9 Financial Instruments, as a financial liability on contract inception.

In these instances WEHI:

- Recognises the asset in accordance with the requirements of other relevant applicable Australian Accounting Standards (e.g. AASB 9, AASB 16, AASB 116 and AASB 138)
- Considers whether any other financial statement elements should be recognised (‘related amounts’) in accordance with the relevant applicable Australian Accounting Standard including:
  - contributions by owners (AASB 1004)
  - a lease liability (AASB 16)
  - a financial instrument (AASB 9)
  - a provision (AASB 137)
- Recognises income immediately in profit or loss for the excess of the initial carrying amount of the asset over any related amounts recognised.
Capital grants – Buildings and Equipment
For capital grants received under an enforceable agreement where it includes a transfer to enable WEHI to acquire or construct a recognisable non-financial asset to identified specifications which will be controlled by WEHI when completed, WEHI recognises a liability for the excess of the fair value of the transfer over any related amounts recognised and recognises income as it satisfies its obligations under the transfer. As the capital grants received by WEHI are primarily for buildings works and scientific equipment, WEHI recognises income as the building works are completed and as equipment is purchased/constructed (when it satisfies its obligations).

Royalty Income
Royalty income is accounted for under AASB 15 and is recognised when there is an enforceable right to receive income.

Sales of goods/services
Revenue is recognised when control of the goods has been transferred to the customer or the service/performance obligation has been provided.

(d) Property, plant and equipment
Property, plant and equipment held for use in research, or for administrative purposes, are recorded at historical cost, less accumulated depreciation. Cost comprises expenditure that is directly attributable to the acquisition of the item and subsequent costs incurred to replace parts that are eligible for capitalisation.

Depreciation is on a straight-line basis over the estimated useful life of the asset. A regular review of useful lives, depreciation rates and residual values is conducted at each year end, with the effect of any changes in estimate accounted for on a prospective basis.

Items of property, plant and equipment are derecognised upon disposal or when no further economic benefits are expected from their use or disposal. Gains and losses on disposals of items of property, plant and equipment are determined by comparing proceeds with carrying amounts and are included in the statement of comprehensive income when realised.

The following table indicates the expected useful lives of non-current assets on which the depreciation charges are based.

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Useful Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>20 - 40 years</td>
</tr>
<tr>
<td>Plant and equipment</td>
<td>3 - 20 years</td>
</tr>
<tr>
<td>Furniture and fittings</td>
<td>5 - 20 years</td>
</tr>
</tbody>
</table>

(e) Financial instruments – initial recognition and subsequent measurement
A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Financial assets and liabilities are recognised in the statement of financial position when WEHI becomes party to the contractual provisions within the contract.

Financial assets
(i) Initial measurement and recognition
Financial assets are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets (other than financial assets at fair value through profit or loss) are added to or deducted from the fair value of the financial assets, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets at fair value through profit or loss are recognised immediately in profit or loss.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place are recognised on the trade date, that is, the date that WEHI commits to purchase or sell the asset. All recognised financial assets are measured subsequently in their entirety at either amortised cost or fair value, depending on the classification of the financial assets.

(ii) Classification of financial assets
Debt instruments that meet the following conditions are measured subsequently at amortised cost:
- the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Debt instruments that meet the following conditions are measured subsequently at fair value through other comprehensive income (FVTOCI):
- the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling the financial assets; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

By default, all other financial assets are measured subsequently at fair value through profit or loss (FVTPL). Despite the foregoing, WEHI may make the following irrevocable election/designation at initial recognition of a financial asset:
- WEHI may irrevocably elect to present subsequent changes in fair value of an equity investment in other comprehensive income if certain criteria are met; and
- WEHI may irrevocably designate a debt investment that meets the amortised cost or FVTOCI criteria as measured at FVTPL if doing so eliminates or significantly reduces an accounting mismatch.

Financial assets at amortised cost using the effective interest method
The amortised cost of a financial asset is the amount at which the financial asset is measured at initial recognition minus the principal repayments, plus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, adjusted for any loss allowance. The gross carrying amount of a financial asset is the amortised cost of a financial asset before adjusting for any loss allowances. WEHI’s cash and cash equivalents and trade receivables fall within this category.

Interest income is recognised in profit or loss and is included in the “investment income” line item (note 2).

Debt Instruments at fair value through other comprehensive income (FVTOCI)
The corporate bonds held by WEHI are classified as FVTOCI. Subsequently, changes to the carrying value due to foreign exchange, impairment and interest income are recognised in profit or loss. All other changes in the carrying value will be recognised in other comprehensive income. Upon derecognition, the cumulative gains or losses previously recognised in other comprehensive income are reclassified to profit or loss.
Equity instruments at fair value through other comprehensive income (Equity FVTOCI)
On initial recognition, WEHI may make an irrevocable election (on an instrument-by-instrument basis) to designate investments in equity instruments as at FVTOCI. Designation at FVTOCI is not permitted if the equity investment is held for trading. Investments in equity instruments at FVTOCI are initially measured at fair value plus transaction costs. Subsequently, they are measured at fair value with gains and losses arising from changes in fair value recognised in other comprehensive income and accumulated in the investments revaluation reserve. The cumulative gain or loss is not be reclassified to profit or loss on disposal of the equity investments, instead, it is transferred to retained earnings.

Dividends on these investments in equity instruments are recognised in profit or loss in accordance with AASB 9. This is included in the “investment income” line item (note 2).

Financial assets at fair value through profit or loss (FVTPL)
Financial assets that are held within a different business model other than ‘hold to collect’ or ‘hold to collect and sell’ are categorised at fair value through profit and loss. Further, irrespective of business model financial assets whose contractual cash flows are not solely payments of principal and interest are accounted for at FVTPL. WEHI’s investment in hybrid instruments and managed international share fund fall within this category.

(iii) Foreign exchange gains and losses
The carrying amount of financial assets that are denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of each reporting period.

(iv) Impairment of financial assets
WEHI recognises a loss allowance for expected credit losses (ECL) on investments in debt instruments that are measured at amortised cost or at FVTOCI, lease receivables, trade receivables and contract assets, as well as on financial guarantee contracts. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

WEHI recognises lifetime ECL when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, WEHI measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events within 12 months after the reporting date.

(v) Term Deposits are recorded at amortised cost, with revenue recognised on an accruals basis.

(vi) Dividend revenue is recognised when the dividend is received. Interest revenue is recognised and accrued on a time proportionate basis that takes into account the effective yield on the financial asset.

(vii) Interests in jointly controlled assets or operations
In respect of any interest in jointly controlled assets, WEHI does not consolidate but recognises in the financial statements:
- its share of jointly controlled assets;
- any liabilities that it had incurred;
- its share of liabilities incurred jointly by the joint venture;
- any income earned from the selling or using of its share of the output from the joint venture; and
- any expenses incurred in relation to being an investor in the joint venture.

For jointly controlled operations, WEHI recognises: the assets that it controls and the liabilities that it incurs; expenses that it incurs; and its share of income that it earns from selling outputs of the joint venture.

Financial liabilities
(i) Initial measurement and derecognition
Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.

All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

WEHI’s financial liabilities include trade and other payables and unearned grants and fellowships.

(ii) Subsequent measurement
For purposes of subsequent measurement, financial liabilities are classified in two categories:
- Financial liabilities at fair value through profit or loss, which WEHI does not have any
- Financial liabilities at amortised cost (Trade and other payables, Unearned grants and fellowships).

Financial liabilities at amortised cost
After initial recognition, financial liabilities at amortised cost are measured using the effective interest rate (EIR) method. Gains and losses are recognised in profit or loss when the liabilities are derecognised as well as through the EIR amortisation process.

Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included as finance costs in the statement of profit or loss.

WEHI administers some of its research grant contracts on behalf of its researchers whilst retaining substantially all the risks and rewards of ownership of the funds associated with the research grants. Accordingly, WEHI recognises the transferred asset, being the grant funds, in its entirety as a financial asset, and recognises an equal amount as a financial liability for the consideration received.

In subsequent periods, WEHI recognises an income as and when the funds are expended, representing the relinquishment of that portion of WEHI’s obligation to refund advances of research funding previously held on the statement of financial position.

(i) Cash and cash equivalents
Cash comprises cash on hand and on-demand deposits. Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash, which are subject to an insignificant risk of changes in value and have a maturity of three months or less at the date of acquisition.
(g) **Trade and other receivables**

Trade and other receivables are initially recorded at fair value and are generally due for settlement within 30 days from date of invoice. A provision for expected credit loss (ECL) is recognised in accordance with AASB 9. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that WEHI expects to receive, discounted at an approximation of the original effective interest rate. Cash flows relating to short-term receivables are not discounted if the effect of discounting is immaterial. When a trade receivable for which a provision for expected credit loss has been recognised becomes uncollectible in a subsequent period, it is written off against the provision.

WEHI applies a simplified approach in calculating ECLs. Therefore, WEHI does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date. WEHI has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the debtors and the economic environment.

(h) **Trade and other payables**

Trade and other payables represent amounts reflected at notional amounts owed to suppliers for goods and services provided to WEHI prior to the end of the financial year that are unpaid. Trade and other payables are non-interest bearing and have various repayment terms but are usually paid within 30 to 60 days of recognition.

(i) **Research costs**

Research costs are recognised as an expense when incurred and reported in the financial year in which they relate.

(j) **Goods and Services Tax (GST)**

Revenues, expenses and assets are recognised net of the amount of GST except:

- where the amount of GST incurred is not recoverable from the taxation authority, it is recognised as part of the cost of acquisition of an asset or as part of an item of expense; or
- for receivables and payables which are recognised inclusive of GST.

The net amount of GST recoverable from, or payable to, the taxation authority is included as part of receivables or payables. Cash flows are included in the statement of cash flows on a gross basis. The GST component of cash flows arising from investing and financing activities which is recoverable from, or payable to, the taxation authority is classified within operating cash flows.

(k) **Provisions**

Provisions are recognised when all three of the following conditions are met:

- WEHI has a present obligation (legal or constructive) as a result of a past event
- It is probable that the organisation is required to settle the obligation
- A reliable estimate can be made of the amount of the obligation.

Provisions are not recognised for future operating losses.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material).

(l) **Employee benefits**

Provision is made for benefits accruing to employees in respect of annual leave and long service leave, when it is probable that settlement will be required and they are capable of being measured reliably.

Provisions made in respect to annual leave and long service leave expected to be settled within 12 months, are measured at their nominal values, using the remuneration rate expected to apply at the time of settlement. These are included in the current provision for employee benefits.

Provisions made in respect to long service leave which are not expected to be settled within 12 months are measured at the present value of the estimated future cash outflows to be made by WEHI in respect of services provided by employees up to the reporting date. These are included in the non-current provision for employee benefits.

(m) **Foreign currency**

All transactions in foreign currency during the financial year are brought to account using the exchange rate in effect at the date of the transaction. Foreign currency monetary items at reporting date are translated at the exchange rate existing at that date and exchange differences are recognised in the net surplus or deficit in the period in which they arise.

(n) **Leased assets**

**WEHI as lessee**

WEHI assesses whether a contract is or contains a lease, at contract inception. WEHI recognises a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low value assets (such as tablets and personal computers, small items of office furniture and telephones). For these leases, WEHI recognises the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

**Right-of-use asset**

Right-of-use assets comprise the initial measurement of the corresponding lease liability, lease payments made at or before the commencement day, less any lease incentives received and any initial direct costs. They are subsequently measured at cost less accumulated depreciation and impairment losses.

If WEHI incurs an obligation for costs to dismantle and remove a leased asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease, a provision is recognised and measured. To the extent that the costs relate to a right-of-use asset, the costs are included in the related right-of-use asset.
Right-of-use assets are depreciated over the shorter period of the lease term and useful life of the underlying asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that WEHI expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset. The depreciation starts at the commencement date of the lease.

The right-of-use assets are presented as a separate line in the statement of financial position. WEHI reviews right-of-use assets for impairment annually.

Variable rents that do not depend on an index or rate are not included in the measurement of the lease liability and the right-of-use asset. The related payments are recognised as an expense in the period in which the event or condition that triggers those payments occurs and are included in “Other expenses” in profit or loss.

**Lease liability**

At the commencement date of the lease, WEHI recognises lease liabilities measured at the present value of the lease payments to be made over the lease term, discounted by the rate implicit in the lease. If this rate cannot be readily determined, WEHI uses its incremental borrowing rate.

Lease payments included in the measurement of the lease liability comprise:

- Fixed lease payments (including in-substance fixed payments), less any lease incentives receivable;
- Variable lease payments that depend on an index or rate;
- The amount expected to be payable by the lessee under residual value guarantees;
- The exercise price of purchase options, if the lessee is reasonably certain to exercise the options; and
- Payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The lease liability is included within “Trade and other payables” in the statement of financial position. The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made.

WEHI reviews and remeasures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) where required.

**Concessionary leases**

WEHI has several leases for premises which are provided at significantly below-market terms and conditions, principally to enable WEHI to further its medical research objectives.

WEHI is dependent on these leases as the premises are used to run its operations to deliver medical research outcomes. WEHI is restricted on the use of these premises by the lease providers and may not utilise the premises for other purposes. WEHI measures concessionary leases at cost.

A summary of concessionary leases held by WEHI is located in note 26.

WEHI as lessor

WEHI enters into sub-lease agreements as a lessor with respect to the Parkville and Bundoora premises.

Leases for which WEHI is a lessor are classified as finance or operating leases. Whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee, the contract is classified as a finance lease. All other leases are classified as operating leases. WEHI is not the lessee in any finance leases.

Rental income from operating leases is recognised on a straight-line basis over the term of the relevant lease. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognised on a straight-line basis over the lease term.

When a contract includes both lease and non-lease components, WEHI applies AASB 15 to allocate the consideration under the contract to each component.

**Impairment of non-financial assets**

All assets are assessed annually for indications of impairment. If there is an indication of impairment, the assets concerned are tested as to whether their carrying value exceeds their possible recoverable amount. Where an asset’s carrying value exceeds its recoverable amount, the difference is written-off as an expense. The recoverable amount for most assets is measured at the higher of value in use and fair value less costs to sell. Depreciated replacement cost is used to determine value in use. Depreciated replacement cost is the current replacement cost of an item of plant and equipment less, where applicable, accumulated depreciation to date, calculated on the basis of such cost.

**Critical accounting judgements and key sources of estimation uncertainty**

In the application of WEHI’s accounting policies, which are described above, management may from time to time make judgements, estimates and assumptions about the carrying values of assets and liabilities that may not be readily apparent from other sources. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the result of which form the basis of making the judgement. Key areas in which management has exercised judgement include the calculation of the fair value of financial assets, the carrying value of employee benefits, the carrying value of provisions for royalties and revenue recognition assessment (refer to respective notes).

**Comparatives**

Comparative figures can be adjusted to conform to changes in presentation for the current financial period where required by accounting standards or as a result of changes in accounting policy. Where necessary, comparatives have been reclassified and repositioned for consistency with current period disclosure. No material reclassifications have been made to prior period disclosures.
(r) Impact of new and revised Accounting Standards

In the current period, WEHI has adopted all of the new and revised standards and interpretations issued by the Australian Accounting Standards Board (AASB) that are relevant to its operations and effective for the current reporting period.

AASB 15 - Revenue from contracts with customers and AASB 1058 - Income for NFP entities

In the current year, these standards became effective for WEHI with reference to the previous deferral for research grants.

WEHI has applied AASB 1058 in accordance with the modified retrospective (cumulative catch-up) method where the comparative years are not restated. Instead, WEHI has recognised the cumulative effect of initially applying AASB 1058 in relation to research grants received for the first time for the year ending 31 December 2020. WEHI has also elected to apply AASB 1058 in relation to research grants retrospectively only to contracts and transactions that are not ‘completed contracts’ at the date of initial application, that is, as at 1 January 2020.

Research grants

AASB 1058 requires that in cases where there is an ‘enforceable’ contract with a customer with ‘sufficiently specific’ performance obligations, the transaction should be accounted for under AASB 15 where income is recognised when (or as) the performance obligations are satisfied, as opposed to immediate income recognition under AASB 1058.

WEHI has conducted an analysis of the research grant contracts and analysed the terms of each contract to determine whether the arrangement meets the enforceability and the ‘sufficiently specific’ criteria under AASB 15 where income is recognised when (or as) the performance obligations are satisfied. WEHI has also considered specific clauses within the contracts with regard to obligations present to return funding to the grantor or transferring to other bodies.

For those research grant contracts that are not enforceable or the performance obligations are not sufficiently specific, the transaction is accounted for under AASB 1058, unless where WEHI has recognised this under AASB 9 Financial Instruments. In this instance, WEHI recognises a financial asset and a related financial liability for the consideration received.

Based on an analysis of WEHI’s research grant contracts as at 1 January 2020, WEHI notes that it administers some of its research grant contracts on behalf of its researchers whilst retaining substantially all the risks and rewards of ownership of the funds associated with the research grants. WEHI has also determined that the refund obligations present within the contracts constitute a financial liability at contract inception, and therefore this has been accounted for under AASB 9 Financial Instruments.

Accordingly, WEHI recognises the grant funds as a financial asset and recognises an equal amount as a financial liability on the statement of financial position under ‘Unearned grants and fellowships’. This is subsequently recognised as income as and when the funds are expended which represents the relinquishment of that portion of WEHI’s obligation to refund advances of research funding previously held on the statement of financial position.

WEHI has assessed that the adoption of AASB 1058 (Research Grants) does not have any impact on the amounts recognised in the financial statements as WEHI has always recognised a financial liability for the research grants, which is released as and when expenditure is incurred.

Financial impact of the initial adoption of AASB 1058 (Research Grants):

Impact on line items affected by the adoption of AASB 1058 (Research Grants) as compared to AASB 1054 for the year ended 31 December 2020:

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>As presented under AASB 1004</th>
<th>AASB 1058 / AASB 9 adjustments</th>
<th>As presented under AASB 1058 / AASB 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unearned grants and fellowships - Research Grants</td>
<td>42,466</td>
<td>-</td>
<td>42,466</td>
</tr>
</tbody>
</table>
At the date of authorisation of the financial report, the standards and interpretations that are relevant to WEHI, listed below, were on issue but not yet effective. WEHI is currently performing an assessment of the financial impacts and disclosures from the application of the new standards and their amendments on the financial reports.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Effective for annual reporting periods beginning on or after</th>
<th>Expected to be initially applied in the financial year ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASB 2020-1 Amendments to AASs –Classification of Liabilities as Current or Non-current</td>
<td>1 January 2023</td>
<td>31 December 2023</td>
</tr>
<tr>
<td>A liability is classified as current if the entity has no right at the end of the reporting period to defer settlement for at least 12 months after the reporting period. The AASB recently issued amendments to AASB 101 Presentation of Financial Statements to clarify the requirements for classifying liabilities as current or non-current. Specifically: - The amendments specify that the conditions which exist at the end of the reporting period are those which will be used to determine if a right to defer settlement of a liability exists. - Management intention or expectation does not affect classification of liabilities. - In cases where an instrument with a conversion option is classified as a liability, the transfer of equity instruments would constitute settlement of the liability for the purpose of classifying it as current or non-current. These amendments are applied retrospectively.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AASB 2020-3 Amendments to AASB 137 – Onerous Contracts – Cost of Fulfilling a Contract</td>
<td>1 January 2022</td>
<td>31 December 2022</td>
</tr>
<tr>
<td>AASB 137 defines an onerous contract as a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. Unavoidable cost is the lower of the cost of fulfilling the contract and any compensation or penalties arising from failure to fulfil it. AASB 137 does not specify which costs to include in determining the cost of fulfilling a contract. Consequently, AASB 137 was amended to clarify that when assessing whether a contract is onerous, the cost of fulfilling the contract comprises all costs that relate directly to the contract, which includes both the: - Incremental costs of fulfilling that contract (e.g., materials and labour); and - An allocation of other costs that relate directly to fulfilling contracts (e.g., depreciation of property, plant and equipment) An entity shall apply these amendments to contracts for which it has not yet fulfilled all its obligations at the beginning of the annual reporting period in which it first applies the amendments (the date of initial application). Comparative information is not restated. Instead, the cumulative effect of initially applying the amendments is recognised as an adjustment to the opening balance of retained earnings or other component of equity, as appropriate, at the date of initial application.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AASB 1060 General Purpose Financial Statements – Simplified Disclosures for For-Profit and Not-for-Profit Tier 2 Entities</td>
<td>1 January 2022</td>
<td>31 December 2022</td>
</tr>
<tr>
<td>To reduce the cost of preparing general purpose financial statements while maintaining their usefulness, certain entities are permitted to apply reduced disclosure requirements. Those requirements are currently identified in each applicable Australian Accounting Standard. The AASB developed AASB 1060, a new simplified disclosure standard based on IFRS for Small and Medium-sized Entities, to replace the reduced disclosure requirements. These simplified disclosure requirements are now collated in a single disclosure standard.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
amendments on the financial reports. WEHI is currently performing an assessment of the financial impacts and disclosures from the application of the new standards and their yet effective.

At the date of authorisation of the financial report, the standards and interpretations that are relevant to WEHI, listed below, were on issue but not yet effective:

- Standards and interpretations issued not yet effective

Simplified disclosure requirements are now collated in a single disclosure standard. The AASB developed AASB 1060, a new simplified disclosure standard based on IFRS for Small and Medium-sized Entities, to replace the reduced disclosure requirements. These

The usefulness, certain entities are permitted to apply reduced disclosure requirements. Those for-Profit and Not-for-Profit Tier 2 Entities

AASB 1060 General Purpose Financial Statements – Simplified Disclosures for

Effective for annual reporting period

1 January 2022 31 December 2022

1 January 2023 31 December 2023

Initial application of amendments

- An allocation of other costs that relate directly to fulfilling contracts (e.g., depreciation

- Incremental costs of fulfilling that contract (e.g., materials and labour); and

Consequently, AASB 137 was amended to clarify that when assessing whether a

AASB 137 does not specify which costs to include in determining the cost of fulfilling a

meeting the obligations under the contract exceed the economic benefits expected to be

These amendments are applied retrospectively.

- In cases where an instrument with a conversion option is classified as a liability, the

Specifically:

- The amendments specify that the conditions which exist at the end of the reporting

period to defer settlement for at least 12 months after the reporting period. The AASB

A liability is classified as current if the entity has no right at the end of the reporting

initially applied in the

financial year ending

Expected to be

– 2020

\(\frac{\text{Gain on sale of investments}}{\text{Loss on sale of investments}}\)

297

297

4. Operating expenses

The following items of expense are included in the net surplus:

Employee benefits expense

Depreciation of property, plant and equipment

Buildings

Plant and equipment

Furniture and fittings

Total depreciation

5. Venetoclax monetisation

On 14 June 2017, WEHI entered into an agreement with CPPIB Credit Europe S.a.r.l., a wholly owned subsidiary of Canada Pension Plan Investment Board (CPPiB), for the partial sale of royalty rights in an anti-cancer treatment known as venetoclax. Venetoclax is the result of a research collaboration with Genentech, a member of the Roche Group, and Abbvie and is based on ground-breaking scientific discoveries made at WEHI over three decades ago.

The monetisation arrangement resulted in a transaction that included a cash payment of US$250 million upfront and potential future milestone payments of up to US$75 million. The upfront cash payment has been recognised as income in the statement of profit or loss and other comprehensive income for the year ended 31 December 2017. A number of significant costs associated with the monetisation income have also been included in the statement of profit or loss and on the statement of financial position.

During the year WEHI recognised the following monetisation income and associated costs:

Royalties Earned

Less associated costs:

Net movement in provision for net commercial income distribution

Net Monetisation income

Royalty income earned for 2020 was converted to Australian dollars using the spot rate at 31 December 2020. As at the date of invoice (28 February 2021) an unrealised foreign exchange loss of $73,000 existed. The funds are expected to be received in March 2021 and a realised gain/loss will be recorded upon receipt, which will be reflected in the 2021 statement of profit or loss.

As a result of the venetoclax monetisation transaction and WEHI’s net commercial income policy, commitments for payments to employees may be payable in future years, subject to Board approval. The nominal amount of the future commitments is $16,750,000. Refer to note 13 for further details.
6. Directors' remuneration

The directors of The Walter and Eliza Hall Institute of Medical Research during the period were:

P Collins C Kilpatrick TF Moran JS Hemstritch
P Connolly J McCluskey JS Savill RH Wylie
J Dyson ME McDonald C Viney MW Broomhead
S Kapur* * Resigned in Dec 2020

The aggregate income paid or payable, or otherwise made available, in respect of the financial period, to all directors of WEHI, directly or indirectly, by WEHI or by any related party was nil (2019: nil).

Aggregate retirement benefits paid to all directors of WEHI, by WEHI or by any related party was nil (2019: nil).

<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditing the financial report</td>
<td>65,500</td>
<td>65,000</td>
</tr>
<tr>
<td>Non audit services*</td>
<td>63,733</td>
<td>246,947</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>129,233</strong></td>
<td><strong>311,947</strong></td>
</tr>
</tbody>
</table>

* During the year, Deloitte were engaged to provide workplace relations advice.

8. Current tax assets

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franking credits receivable</td>
<td>1,451</td>
<td>2,377</td>
</tr>
<tr>
<td>Current tax liability</td>
<td>(170)</td>
<td>(1,137)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,281</strong></td>
<td><strong>1,240</strong></td>
</tr>
</tbody>
</table>

9. Trade and other receivables

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sundry debtors</td>
<td>3,041</td>
<td>9,072</td>
</tr>
<tr>
<td>Accrued income</td>
<td>15,484</td>
<td>6,668</td>
</tr>
<tr>
<td>Royalty Income receivable (monetisation)</td>
<td>38,961</td>
<td>35,633</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57,486</strong></td>
<td><strong>51,373</strong></td>
</tr>
<tr>
<td>Allowance for credit losses</td>
<td>(32)</td>
<td>(62)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57,454</strong></td>
<td><strong>51,311</strong></td>
</tr>
</tbody>
</table>

**Movement in the allowance for credit losses**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at beginning of the year</td>
<td>62</td>
<td>191</td>
</tr>
<tr>
<td>Impairment losses recognised</td>
<td>(30)</td>
<td>62</td>
</tr>
<tr>
<td>Amounts written off during the year as uncollectible</td>
<td>-</td>
<td>(191)</td>
</tr>
<tr>
<td><strong>Balance at end of the year</strong></td>
<td><strong>32</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

**Impairment expense**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowance for credit losses credit / (expense)</td>
<td>(30)</td>
<td>62</td>
</tr>
</tbody>
</table>
10. Other financial assets

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments in debt instruments classified as FVOCI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>105,426</td>
<td>138,866</td>
</tr>
<tr>
<td>Investments in equity instruments designated as FVOCI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic equities</td>
<td>238,238</td>
<td>227,809</td>
</tr>
<tr>
<td>International equities</td>
<td>113,113</td>
<td>86,846</td>
</tr>
<tr>
<td>Other Investments classified as FVTPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic managed fund</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>International managed fund</td>
<td></td>
<td>16,637</td>
</tr>
<tr>
<td>Hybrid instruments</td>
<td>85,663</td>
<td>77,202</td>
</tr>
<tr>
<td>Total Investments</td>
<td>559,086</td>
<td>545,607</td>
</tr>
</tbody>
</table>

Investments in associates

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unquoted shares</td>
<td>2,345</td>
<td>2,034</td>
</tr>
<tr>
<td>Total Investments</td>
<td>561,431</td>
<td>547,641</td>
</tr>
</tbody>
</table>

(a) Fair value measurements recognised in the statement of financial position

The following table provides an analysis of financial instruments that are measured, subsequent to initial recognition, at fair value, grouped into levels 1 to 3 based on:
- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 fair value measurements are those derived from inputs other than those quoted prices included within level 1 that are observable for the asset, either directly (i.e. as prices) or indirectly (i.e. derived from prices.)
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset that are not based on observable market data.

<table>
<thead>
<tr>
<th></th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>31 December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial assets measured at fair value</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td>Quoted shares</td>
<td>367,998</td>
<td>-</td>
<td>-</td>
<td>367,998</td>
</tr>
<tr>
<td>Floating rate securities</td>
<td>85,663</td>
<td>85,592</td>
<td>-</td>
<td>171,255</td>
</tr>
<tr>
<td>Fixed rate securities</td>
<td>-</td>
<td>19,833</td>
<td>-</td>
<td>19,833</td>
</tr>
<tr>
<td>Unquoted shares*</td>
<td>-</td>
<td>-</td>
<td>2,345</td>
<td>2,345</td>
</tr>
<tr>
<td>Total</td>
<td>453,661</td>
<td>105,425</td>
<td>2,345</td>
<td>561,431</td>
</tr>
</tbody>
</table>

*As at 31 December 2020, WEHI held a 49% (2019: 49%) share of equity in Catalyst Therapeutics Pty Ltd, with a carrying value of $1,397,000 (2019: $579,000). Anaxis Pharma Pty Ltd is a wholly owned subsidiary of Catalyst Therapeutics Pty Ltd. WEHI also held a 48.5% (2019: 48.5%) share of the equity in Murigen Pty Ltd, with nil carrying value (2019: nil). WEHI’s investment in VCCC is detailed in note 24.

(b) Reconciliation of level 3 fair value measurements of financial assets

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening balance</td>
<td>2,034</td>
<td>2,067</td>
</tr>
<tr>
<td>Revaluation</td>
<td>311</td>
<td>(33)</td>
</tr>
<tr>
<td>Closing balance</td>
<td>2,345</td>
<td>2,034</td>
</tr>
</tbody>
</table>
### 11. Property, plant and equipment

<table>
<thead>
<tr>
<th></th>
<th>Buildings $’000</th>
<th>Work in progress $’000</th>
<th>Plant and equipment $’000</th>
<th>Furniture and fittings $’000</th>
<th>Land Lease $’000</th>
<th>Total $’000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross carrying amount</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Balance at 1 January 2019</strong></td>
<td>190,530</td>
<td>13,786</td>
<td>63,088</td>
<td>2,047</td>
<td>16,200</td>
<td>285,651</td>
</tr>
<tr>
<td>Additions at cost</td>
<td>-</td>
<td>12,252</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12,252</td>
</tr>
<tr>
<td>Transfers</td>
<td>3,661</td>
<td>(21,534)</td>
<td>17,667</td>
<td>91</td>
<td>-</td>
<td>(115)</td>
</tr>
<tr>
<td>Disposals</td>
<td>(83)</td>
<td>-</td>
<td>(5,725)</td>
<td>-</td>
<td>-</td>
<td>(5,808)</td>
</tr>
<tr>
<td>Reclassification to Equity</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(16,200)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2019</strong></td>
<td>194,108</td>
<td>4,504</td>
<td>75,030</td>
<td>2,138</td>
<td>-</td>
<td>275,780</td>
</tr>
<tr>
<td>Additions at cost</td>
<td>-</td>
<td>24,195</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>24,195</td>
</tr>
<tr>
<td>Transfers</td>
<td>1,803</td>
<td>(14,935)</td>
<td>12,697</td>
<td>486</td>
<td>-</td>
<td>51</td>
</tr>
<tr>
<td>Disposals</td>
<td>-</td>
<td>-</td>
<td>(38)</td>
<td>-</td>
<td>-</td>
<td>(38)</td>
</tr>
<tr>
<td>Reclassification to Equity</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2020</strong></td>
<td>195,911</td>
<td>13,764</td>
<td>87,689</td>
<td>2,624</td>
<td>-</td>
<td>299,988</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Buildings $’000</th>
<th>Work in progress $’000</th>
<th>Plant and equipment $’000</th>
<th>Furniture and fittings $’000</th>
<th>Land Lease $’000</th>
<th>Total $’000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accumulated depreciation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Balance at 1 January 2019</strong></td>
<td>(46,969)</td>
<td>-</td>
<td>(37,903)</td>
<td>(1,622)</td>
<td>-</td>
<td>(86,494)</td>
</tr>
<tr>
<td>Disposals</td>
<td>-</td>
<td>-</td>
<td>5,519</td>
<td>-</td>
<td>-</td>
<td>5,519</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>(5,275)</td>
<td>-</td>
<td>(5,536)</td>
<td>(75)</td>
<td>-</td>
<td>(10,886)</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2019</strong></td>
<td>(52,244)</td>
<td>-</td>
<td>(37,920)</td>
<td>(1,697)</td>
<td>-</td>
<td>(91,861)</td>
</tr>
<tr>
<td>Disposals</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>(5,300)</td>
<td>-</td>
<td>(6,415)</td>
<td>(103)</td>
<td>-</td>
<td>(11,818)</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2020</strong></td>
<td>(57,544)</td>
<td>-</td>
<td>(44,330)</td>
<td>(1,800)</td>
<td>-</td>
<td>(103,674)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Buildings $’000</th>
<th>Work in progress $’000</th>
<th>Plant and equipment $’000</th>
<th>Furniture and fittings $’000</th>
<th>Land Lease $’000</th>
<th>Total $’000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carrying amounts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As at 31 December 2019</td>
<td>141,864</td>
<td>4,504</td>
<td>37,110</td>
<td>441</td>
<td>-</td>
<td>183,919</td>
</tr>
<tr>
<td>As at 31 December 2020</td>
<td>138,367</td>
<td>13,764</td>
<td>43,359</td>
<td>824</td>
<td>-</td>
<td>196,314</td>
</tr>
</tbody>
</table>
12. Trade and other payables

<table>
<thead>
<tr>
<th></th>
<th>2020 $’000</th>
<th>2019 $’000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade creditors</td>
<td>12,299</td>
<td>5,656</td>
</tr>
<tr>
<td>Accrued expenses</td>
<td>6,180</td>
<td>4,431</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18,479</td>
<td>10,087</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Provision for net commercial income distribution</th>
<th>2020 $’000</th>
<th>2019 $’000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision for employee benefits*</td>
<td>14,874</td>
<td>16,082</td>
</tr>
<tr>
<td><strong>Current provisions</strong></td>
<td>37,448</td>
<td>37,852</td>
</tr>
</tbody>
</table>

| Provision for employee benefits                  | 2,221      | 2,204      |
| Provision for net commercial income distribution | 30,290     | 32,660     |
| **Non current provisions**                       | 32,511     | 34,864     |
| **Total**                                        | 69,959     | 72,716     |

* Included in current employee provisions are $12,487,000 (2019: $13,690,000) of long service leave for which a current entitlement exists.

As a result of the venetoclax monetisation transaction and WEHI’s net commercial income distribution policy relating to distributions to employees, commitments may be payable in future years.

The extent to which an outflow of funds under these commitments, will be required is dependent on staff members remaining employed by WEHI, the number of eligible employees within the distribution period and Board approval. WEHI finalised its net commercial income distribution policy in 2018, which resulted in an increase to the nominal amounts that may be payable in future years (no amount has been recognised as a liability) below:

Potential payments by WEHI arising from royalty distributions to staff:

| Payable within 1 year | 1,750 | 1,500 |
| Payable between 1-5 years | 6,000 | 6,000 |
| Payable 5+ years | 9,000 | 9,000 |
| **Total** | 16,750 | 16,500 |

Number of employees at end of financial period (full time equivalents)

| Staff | 746 | 737 |
| Visiting scientists | 32 | 34 |
| **Total** | 778 | 771 |

14. Unearned grants and fellowships

Grants and fellowships already committed and applicable to future periods:

| Grants | 27,463 | 26,074 |
| Fellowships | 10,916 | 8,996 |
| Capital Grants | 7,248 | 14,861 |
| **Total** | 45,627 | 49,931 |

15. Other liabilities

Monies Held in Trust:

| Staff Salary Packaging deposits | 330 | 264 |
| **Total** | 330 | 264 |
16. Capital movements

<table>
<thead>
<tr>
<th></th>
<th>2020 $'000</th>
<th>2019 $'000</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The net surplus for the financial period is $25,592,000 (2019: surplus $21,112,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This has been appropriated as follows:</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>Transfer to Permanent Invested Fund</td>
<td>16(b)</td>
<td>3,489</td>
</tr>
<tr>
<td>Transfer to General Fund</td>
<td>16(c)</td>
<td>25,676</td>
</tr>
<tr>
<td>Transfer to Royalty Fund</td>
<td>16(d)</td>
<td>1,096</td>
</tr>
<tr>
<td>Transfer to Leadership Fund</td>
<td>16(e)</td>
<td>962</td>
</tr>
<tr>
<td>Transfer to Discovery Fund</td>
<td>16(f)</td>
<td>213</td>
</tr>
<tr>
<td><strong>Total appropriations to funds</strong></td>
<td></td>
<td><strong>31,436</strong></td>
</tr>
</tbody>
</table>

| (b) Permanent Invested Fund |            |            |
| Balance at beginning of period | 198,833 | 194,181 |
| Net surplus for period transferred from statement of profit or loss and other comprehensive income | 3,489  | 4,652  |
| **Total Permanent Invested Fund** |            | **202,322** | **198,833** |

| (c) General Fund |            |            |
| Balance at beginning of period | 371,193 | 377,710 |
| Equity transfer on initial adoption of AASB 16 | - | (16,182) |
| Transfers from Investment revaluation reserve on sale of investment | (2,584) | 1,908 |
| Net surplus for period transferred from statement of profit or loss and other comprehensive income | 25,676 | 7,757 |
| **Total General Fund** |            | **394,285** | **371,193** |

| (d) Royalty Fund |            |            |
| Balance at beginning of period | 55,039 | 48,054 |
| Net surplus for period transferred from statement of profit or loss and other comprehensive income | 1,096 | 6,985 |
| **Total Royalty Fund** |            | **56,135** | **55,039** |

| (e) Leadership Fund |            |            |
| Balance at beginning of period | 27,965 | 26,557 |
| Net surplus for period transferred from statement of profit or loss and other comprehensive income | 962 | 1,408 |
| **Total Leadership Fund** |            | **28,927** | **27,965** |

| (f) Discovery Fund |            |            |
| Balance at beginning of period | 5,271 | 4,961 |
| Net surplus for period transferred from statement of profit or loss and other comprehensive income | 213 | 310 |
| **Total Discovery Fund** |            | **5,484** | **5,271** |

| (g) Investment revaluation reserve |            |            |
| Balance at beginning of period | 67,200 | 8,211 |
| Revaluation gain recognised for the period (FVTOCI equity Instruments) | 68 | 59,682 |
| Revaluation gain recognised for the period (FVTOCI debt Instruments) | 322 | 1,508 |
| Transfers to profit and loss on sale of investments (FVTOCI debt Instruments) | 137 | (293) |
| Transfers to profit or loss on sale of investments (FVTOCI equity Instruments) | 2,584 | (1,908) |
| **Total investment revaluation reserve** |            | **70,311** | **67,200** |

| **Total funds** |            | **757,464** | **725,501** |
17. Notes to statement of cash flows

(a) Reconciliation of cash

For the purposes of the statement of cash flows, cash includes cash on hand, cash at bank, monies held at trust (salary packaging bank account for staff) and investments in money market instruments, net of outstanding bank overdrafts.

Cash at the end of the financial period as shown in the statement of cash flows is reconciled to the related items in the statement of financial position as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>19,485</td>
<td>20,368</td>
</tr>
<tr>
<td>Deposits at call</td>
<td>45,957</td>
<td>21,279</td>
</tr>
<tr>
<td>Term Deposits</td>
<td>5,000</td>
<td>28,335</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70,442</strong></td>
<td><strong>69,982</strong></td>
</tr>
</tbody>
</table>

Represented by:

Cash for Institute operations (as per Cash Flow Statement) 70,112 69,163

Cash balances not available for use

Monies Held in Trust - Staff Salary Packaging Deposits 330 819

**Total** 70,442 69,982

(b) Reconciliation of net surplus to net cash flows from operating activities

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net surplus</td>
<td>31,436</td>
<td>21,112</td>
</tr>
<tr>
<td>Depreciation</td>
<td>11,871</td>
<td>10,941</td>
</tr>
<tr>
<td>(Gain) / Loss on disposal of property, plant and equipment</td>
<td>(5)</td>
<td>26</td>
</tr>
<tr>
<td>Donations and bequests moved to Permanent funds</td>
<td>(673)</td>
<td>(1,359)</td>
</tr>
<tr>
<td>Gain / (Loss) on sale of investments</td>
<td>135</td>
<td>(297)</td>
</tr>
<tr>
<td>Fair value adjustment for investments (FVTPL)</td>
<td>(816)</td>
<td>(5,261)</td>
</tr>
<tr>
<td>Increase in investments – dividend reinvestment plans</td>
<td>(9)</td>
<td>(12)</td>
</tr>
<tr>
<td>Grants and donations for capital works</td>
<td>(14,953)</td>
<td>(5,076)</td>
</tr>
<tr>
<td>Foreign exchange gain/loss</td>
<td>10,282</td>
<td>477</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37,268</strong></td>
<td><strong>20,551</strong></td>
</tr>
</tbody>
</table>

Changes in net assets and liabilities:

**(Increase) / decrease in assets:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax assets</td>
<td>926</td>
<td>3,401</td>
</tr>
<tr>
<td>Sundry debtors and prepayments</td>
<td>5,416</td>
<td>(7,428)</td>
</tr>
<tr>
<td>Income receivable</td>
<td>(12,141)</td>
<td>(31,441)</td>
</tr>
<tr>
<td>Net movement in Monies Held in Trust</td>
<td>555</td>
<td>(555)</td>
</tr>
<tr>
<td><strong>Increase / (decrease) in liabilities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade payables</td>
<td>6,675</td>
<td>2,150</td>
</tr>
<tr>
<td>Accrued expenses</td>
<td>1,749</td>
<td>(6,834)</td>
</tr>
<tr>
<td>Tax liabilities</td>
<td>(967)</td>
<td>637</td>
</tr>
<tr>
<td>Current provisions</td>
<td>(404)</td>
<td>9,174</td>
</tr>
<tr>
<td>Other current liabilities (Grants)</td>
<td>(4,304)</td>
<td>34,710</td>
</tr>
<tr>
<td>Non-current provisions</td>
<td>(2,353)</td>
<td>(899)</td>
</tr>
<tr>
<td><strong>Net cash provided / (used) from operating activities</strong></td>
<td><strong>32,420</strong></td>
<td><strong>23,466</strong></td>
</tr>
</tbody>
</table>

(c) Non-cash financing and investing activities

During the financial period:

Dividends of $8,846 (2019: $12,225) were reinvested as part of dividend and distribution reinvestment plans.
18. Right of use assets

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carrying amounts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buildings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At cost</td>
<td>3,200</td>
<td>3,200</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>(671)</td>
<td>(638)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,529</td>
<td>2,562</td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At cost</td>
<td>198</td>
<td>198</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>(44)</td>
<td>(24)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>154</td>
<td>174</td>
</tr>
<tr>
<td><strong>Total depreciation</strong></td>
<td>53</td>
<td>55</td>
</tr>
</tbody>
</table>

Low value and short term leases

For short-term leases (lease term of 12 months or less) and leases of low-value assets, WEHI has opted to recognise a lease expense on a straight-line basis as permitted by AASB 16. The total expense relating to low value and short term leases is as follows:

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low value leases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>

19. Economic dependency

WEHI is reliant upon grants from the Australian Government National Health and Medical Research Council for 24.9% of operating expenditure (2019: 27.7%) and the Victorian Government Department of Health and Human Services, Department of State Development, Business and Innovation for 5.7% of operating expenditure (2019: 6.4%) for support of its basic research activities.

20. Segment information

WEHI is a medical research organisation focussed on the nationally and globally significant areas of health being Cancer Research and Treatments, Healthy Development and Ageing, Infection, Inflammation and Immunity, Computational Biology and New Medicines and Advanced Technologies. All operations are predominantly in Australia.

21. Capital expenditure commitments

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not longer than 1 year</td>
<td>3,813</td>
<td>4,173</td>
</tr>
<tr>
<td>After 1 year but not more than 5 years</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total commitments</strong></td>
<td>3,841</td>
<td>4,173</td>
</tr>
</tbody>
</table>

22. Related party disclosures

(a) Transactions with associates

WEHI received fees during the year from Catalyst Therapeutics Pty Ltd and Anaxis Pharma Pty Ltd totalling $2,722,035 (2019: $2,177,602) for services rendered on normal commercial terms.

WEHI did not receive any royalties during the year from Anaxis Pharma Pty Ltd (2019: nil).

WEHI has a loan receivable of $25,000 from Murigen Pty Ltd (2019: $25,000).

WEHI made no equity contributions during the year to Catalyst Therapeutics Pty Ltd (2019: nil).

WEHI received no return of capital during the year, from either Catalyst Therapeutics Pty Ltd or Anaxis Pharma Pty Ltd (2019: nil).

WEHI made membership contributions to the Victorian Comprehensive Cancer Centre (VCCC) totalling $138,111 (2019: $137,091) WEHI also received fees from the VCCC for collaborate initiatives undertaken during the year of $292,888 (2019: $618,594).

(b) Transactions with directors and director-related entities

During the year various Directors and Director-related entities made donations to WEHI totalling $515,450 (2019: $472,250).

(c) Compensation for key management personnel

The aggregate compensation of the key management personnel of WEHI is set out below:

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term employee benefits</td>
<td>2,245,092</td>
<td>1,862,306</td>
</tr>
<tr>
<td>Post-tax employment benefits</td>
<td>355,460</td>
<td>334,975</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,600,552</td>
<td>2,197,281</td>
</tr>
</tbody>
</table>

* New Executive structure with additional 3 management personnel in 2020
23. Superannuation commitments

(a) Institute employees are members of a range of superannuation funds, which are divided into the following categories:

Those operative and open to membership by new employees:
  UniSuper – Accumulation Super (1)
  Other superannuation funds chosen by employees.

Those closed to future membership by Institute employees:
  Unisuper – Defined Benefit Division
  Unisuper – Accumulation Super (2)

(b) UniSuper plans

UniSuper is a multi employer superannuation fund operated by UniSuper Limited as the corporate trustee and administrated by UniSuper Management Pty Ltd, a wholly owned subsidiary of UniSuper Limited. The operations of UniSuper are regulated by the Superannuation Industry (Supervision) Act 1993.

(i) The UniSuper schemes known as the Defined Benefit Division or Accumulation Super (2) were only available to contributing members of the Walter and Eliza Hall Institute of Medical Research Superannuation Fund (1979) which closed in 2003.

(ii) The maximum contribution rate to the schemes is 25.25% of member’s salary of which the member contributes 8.25% after tax and WEHI 17%.

(iii) UniSuper has advised that the Accumulation Super (2) and Defined Benefit Division plans are defined as multi-employer defined contribution schemes in accordance with AASB 119 Employee Benefits. AASB 119 Employee Benefits states that this is appropriate for a defined benefit plan where the employer does not have access to the information required and there is no reliable basis for allocating the benefits, liabilities, assets and costs between employers.

(iv) The number of members of the Walter and Eliza Hall Institute of Medical Research Superannuation Fund (1979) who became members of the UniSuper – Defined Benefit Division when the fund closed in 2003 was 204. The number of Institute employees who are members of the Defined Benefit Division as at 31 December 2020 was 66 (2019: 73).

(v) New employees who commenced after 1 July 2003 currently have a minimum contribution of 9.5% of their annual salary contributed by WEHI to Accumulation Super (1) or to a fund of their choice prescribed under the Superannuation Guarantee Charge Act (1992).

(c) The total superannuation contributions by WEHI during the period in respect to the above plans were:

<table>
<thead>
<tr>
<th>Superannuation Plan</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>UniSuper – Defined Benefit Division</td>
<td>1,455</td>
<td>1,560</td>
</tr>
<tr>
<td>UniSuper – Accumulation Super (2)</td>
<td>313</td>
<td>354</td>
</tr>
<tr>
<td>UniSuper – Accumulation Super (1)</td>
<td>8,130</td>
<td>7,606</td>
</tr>
<tr>
<td>Other superannuation funds</td>
<td>1,666</td>
<td>1,262</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,564</strong></td>
<td><strong>10,782</strong></td>
</tr>
</tbody>
</table>
24. Financial instruments

(a) Significant accounting policies
Details of the significant accounting policies and methods adopted, including the criteria for recognition, the basis of measurement and the basis on which revenues and expenses are recognised, in respect of each class of financial asset and financial liability are disclosed in note 1 to the financial statements.

(b) Significant terms, conditions and objectives of derivative financial instruments
WEHI does not enter into or trade derivative financial instruments.

(c) Capital risk management
WEHI manages its capital to ensure it will be able to continue as a going concern whilst maximising its return on investment within the risk profile maintained by WEHI. The capital structure consists of permanent funds, retained earnings and reserves.

(d) Financial risk management
WEHI minimises financial risk through the charter given to the investment sub-committee. In line with this charter, WEHI invests short term funds in an appropriate combination of fixed and floating instruments.

(e) Interest rate risk management
WEHI is exposed to interest rate risk as it invests funds at both fixed and floating interest rates. The majority of financial assets in this class are bank accounts, bank bills and fixed interest securities with varying interest rates.

(f) Interest rate sensitivity analysis
The sensitivity analysis below has been determined based on the exposure to interest rates at the reporting date and the stipulated change taking place at the beginning of the financial year and held constant throughout the reporting period. A 25 basis point variation was used as the minimum point and 100 basis point variation as the maximum point. This is consistent with the management’s view of interest rate sensitivity. A change in interest rates would impact net surplus as follows:

<table>
<thead>
<tr>
<th>Interest rate risk</th>
<th>Minimum 25bp (+/-)</th>
<th>Maximum 100bp (+/-)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dec-20 $000's</td>
<td>Dec-19 $000's</td>
</tr>
<tr>
<td>Effect on surplus - rate decrease</td>
<td>(605)</td>
<td>(675)</td>
</tr>
<tr>
<td>Effect on surplus - rate increase</td>
<td>605</td>
<td>675</td>
</tr>
</tbody>
</table>

(g) Equity price sensitivity analysis
The sensitivity analysis below has been determined based on the exposure to equity price risks at the reporting date.
At reporting date, if the equity prices had been 5% higher or lower: 
- net surplus for the year ended 31 Dec 2020 would have been unaffected as the equity investments are classified as not held for trading and the fair value through other comprehensive (FVTOCI) election has been made under AASB 9.
- investment revaluation reserve would increase or decrease by $17.7 million (Dec 2019: $15.8 million) mainly as a result of the changes in fair value of these equity investments.
WEHI’s sensitivity to equity prices has not changed significantly from the prior year.

(h) Credit risk management
Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in a financial loss to WEHI. WEHI has adopted a policy of only dealing with creditworthy counter parties as a means of mitigating the risk of financial loss from defaults. WEHI’s exposure is continuously monitored and reviewed. Trade receivables consist of a large number of customers including granting bodies. WEHI does not have a significant credit exposure to any single party or any group of counter parties having similar characteristics. The carrying amount of financial assets recorded in the financial statements represents WEHI’s maximum exposure to credit risk.

(i) Liquidity risk management
Ultimate responsibility for liquidity risk management rests with the board of directors, who have built an appropriate risk management framework for the management of WEHI’s short, medium and long-term funding and liquidity management. WEHI manages the liquidity risk by maintaining adequate cash reserves, and by continuously monitoring forecast and actual cash flows while matching the maturity profiles of financial assets. Given the current surplus cash assets, liquidity risk is minimal. WEHI does not have any interest bearing liabilities. The remaining contractual maturity for its non-interest-bearing financial liabilities is $9.84 million payable within 3 months of 31 Dec 2020 (2019: $10.087 million).

(j) Fair value
The carrying amount of WEHI’s financial assets and financial liabilities recorded in the financial statements approximates their fair values. The fair value of financial assets with standard terms and conditions and traded on active liquid markets are determined with reference to quoted market prices.
(k) Interest rate risk

The following table details WEHI’s exposure to interest rate risk as at 31 Dec 2020 and 31 Dec 2019.

<table>
<thead>
<tr>
<th></th>
<th>Average interest rate</th>
<th>Variable interest rate</th>
<th>Fixed Less than 1 year</th>
<th>Fixed 1 to 5 years</th>
<th>Fixed More than 5 years</th>
<th>Non-Interest Bearing</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>31 December 2020</strong></td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td>Financial assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>0.16%</td>
<td>65,442</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>65,442</td>
</tr>
<tr>
<td>Tax assets</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,281</td>
</tr>
<tr>
<td>Sundry debtors</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3,009</td>
</tr>
<tr>
<td>Prepayments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,254</td>
</tr>
<tr>
<td>Accrued income</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>54,445</td>
</tr>
<tr>
<td>Term Deposits</td>
<td>1.92%</td>
<td>-</td>
<td>5,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5,000</td>
</tr>
<tr>
<td>Floating rate securities</td>
<td>2.76%</td>
<td>-</td>
<td>13,770</td>
<td>94,116</td>
<td>63,370</td>
<td>-</td>
<td>171,256</td>
</tr>
<tr>
<td>Fixed rate securities</td>
<td>3.74%</td>
<td>-</td>
<td>14,164</td>
<td>5,670</td>
<td>-</td>
<td>-</td>
<td>19,834</td>
</tr>
<tr>
<td>Non listed shares</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,345</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>692,862</td>
</tr>
<tr>
<td>Financial liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade payables</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18,479</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>330</td>
</tr>
<tr>
<td>Unearned grants and fellowships</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>45,627</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64,436</td>
</tr>
</tbody>
</table>

| **31 December 2019**   | $'000                 | $'000                  | $'000                  | $'000              | $'000                  | $'000                | $'000 |
| Financial assets       |                       |                        |                        |                    |                        |                      |       |
| Cash and cash equivalents | 0.74%                 | 41,647                 | -                      | -                  | -                      | -                    | 41,647 |
| Tax assets             | -                     | -                      | -                      | -                  | -                      | -                    | 1,240 |
| Sundry debtors         | -                     | -                      | -                      | -                  | -                      | -                    | 9,010 |
| Prepayments            | -                     | -                      | -                      | -                  | -                      | -                    | 1,670 |
| Accrued income         | -                     | -                      | -                      | -                  | -                      | -                    | 42,301 |
| Term Deposits          | 1.92%                 | -                      | 28,335                 | -                  | -                      | -                    | 28,335 |
| Shares                 | -                     | -                      | -                      | -                  | -                      | -                    | 329,538 |
| Floating rate securities | 2.76%                 | -                      | 24,846                 | 117,906            | 57,302                 | -                    | 200,054 |
| Fixed rate securities  | 3.74%                 | -                      | 1,522                  | 9,080              | 5,413                  | -                    | 16,015 |
| Non listed shares      | -                     | -                      | -                      | -                  | -                      | -                    | 2,034 |
| **TOTAL**              |                       |                        |                        |                    |                        |                      | 671,844 |
| Financial liabilities  |                       |                        |                        |                    |                        |                      |       |
| Trade payables         | -                     | -                      | -                      | -                  | -                      | -                    | 10,087 |
| Other liabilities      | -                     | -                      | -                      | -                  | -                      | -                    | 264   |
| Unearned grants and fellowships | -        | -                      | -                      | -                  | -                      | -                    | 49,931 |
| **TOTAL**              |                       |                        |                        |                    |                        |                      | 60,282 |
25. Jointly controlled operations and assets

**Victorian Comprehensive Cancer Centre Limited (VCCC)**

WEHI is a Member of the Victorian Comprehensive Cancer Centre Joint Venture (the VCCC) and WEHI retains joint control over the arrangement, which it has classified as a Joint Operation. The vision for the VCCC is to save lives through the integration of cancer research, education and patient care. Through innovation and collaboration, the VCCC will drive the next generation of improvements in prevention, detection and cancer treatment. This vision will further the objectives of WEHI. The VCCC is a not-for-profit organisation and has been recognised by the Australian Taxation Office as a Health Promotion Charity.

All Members hold an equal 1/10th share in the assets, liabilities, expenses and income of the VCCC. The members own the VCCC assets as tenants in common; and are severally responsible for the joint venture costs – in the same proportions as their interests.

Interests in the VCCC are not transferrable and forfeited on withdrawal from the joint venture. Distributions are not able to be paid to Members and excess property on winding up will be distributed to other charitable organisations with objects similar to those of the VCCC.

The principal place of business for the VCCC is Level 10, 305 Grattan Street, Melbourne, Victoria.

WEHI’s policy is to value its proportionate member interest based on the most recent audited accounts of the VCCC. The last audited accounts received are dated 30 June 2020.

WEHI’s interest in the above jointly controlled operations is detailed below.

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong> $'000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>1,057</td>
<td>1,457</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Prepayments</td>
<td>34</td>
<td>122</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td><strong>1,122</strong></td>
<td><strong>1,599</strong></td>
</tr>
<tr>
<td>Non-current Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment in Cancer Therapeutics CRC</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>17</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td><strong>19</strong></td>
<td><strong>24</strong></td>
</tr>
<tr>
<td><strong>Share of total assets</strong></td>
<td><strong>1,141</strong></td>
<td><strong>1,623</strong></td>
</tr>
</tbody>
</table>

| **Liabilities**            |          |          |
| Current liabilities        |          |          |
| Trade and other payables   | 127      | 133      |
| Employee benefits          | 42       | 25       |
| **Total current liabilities** | **169** | **158** |

| Non-current liabilities    |          |          |
| Employee benefits          | 24       | 11       |
| **Total non-current liabilities** | **24** | **11** |
| **Share of total liabilities** | **193** | **169** |

**Net Assets**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Assets</strong></td>
<td><strong>948</strong></td>
<td><strong>1,454</strong></td>
</tr>
</tbody>
</table>

**Share of VCCC's net assets**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Share of VCCC's net assets</strong></td>
<td><strong>948</strong></td>
<td><strong>1,454</strong></td>
</tr>
</tbody>
</table>
### 26. Concessionary leases

<table>
<thead>
<tr>
<th>Lease</th>
<th>Description of underlying assets</th>
<th>Lease payments</th>
<th>Lease term</th>
<th>WEHI’s dependence on leases to further its objectives</th>
<th>Restrictions on the use of the underlying assets specific to WEHI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkville crown land</td>
<td>The sub-lease is made on 23 Nov 2011 between Department of Health (Head landlord), and Melbourne Health (Landlord) and WEHI (Tenant). The Department of Health leases Parkville crown land to Melbourne Health for 99 years. Melbourne Health leases Parkville crown land to WEHI for 99 years payable on demand.</td>
<td>$104 per annum, payable on demand</td>
<td>99 years</td>
<td>The lease provides the land on which WEHI was built to perform medical research.</td>
<td>The crown land is used only for community purposes.</td>
</tr>
<tr>
<td>Early Learning and Child Care Centre land *</td>
<td>The sub-lease is made on 31 August 2018 between Department of Health (Head landlord), and Melbourne Health (Landlord) and WEHI (Tenant). The Department of Health leases the land (196 m² in area at ground level) to Melbourne Health. Melbourne Health leases Parkville crown land to WEHI, payable on demand.</td>
<td>$104 per annum, payable on demand</td>
<td>21 years</td>
<td>The lease provides the land on which the Early Learning and Child Care Centre was built. This centre was constructed to address one of the most significant barriers to an ongoing career and advancement at WEHI, being access to adequate childcare.</td>
<td>The crown land is used only for community purposes.</td>
</tr>
<tr>
<td>Bundoora*</td>
<td>La Trobe University (Landlord) commenced the lease on 31 March 2000 for the former Rio Tinto Building at La Trobe University Campus, Bundoora to WEHI (Tenant).</td>
<td>$6.25M – paid upfront</td>
<td>99 years</td>
<td>The lease provides the premises for medical research and animal facilities for the Bundoora campus.</td>
<td>Assignment, sublease, mortgage or license is not permitted without La Trobe University’s consent.</td>
</tr>
<tr>
<td>Wards 8 North and 8 East RMH</td>
<td>Melbourne Health (Landlord) commenced the lease on 16 March 2015 for the areas located on the 8th floor, main block of The Royal Melbourne Hospital to WEHI (Tenant).</td>
<td>nil per annum</td>
<td>6 years</td>
<td>The lease provides the area on which WEHI is located to perform medical research in conjunction with the Hospital.</td>
<td>Assignment, sublease, mortgage or license is not permitted without Melbourne Health’s consent.</td>
</tr>
<tr>
<td>Ward 7 north RMH</td>
<td>Melbourne Health (Landlord) commenced the lease on 10 June 2011 for the premises on the plan known as &quot;Ward 7 North&quot; of The Royal Melbourne Hospital to WEHI (Tenant). The rent is payable on demand.</td>
<td>$1 per annum, payable on demand</td>
<td>21 years</td>
<td>The lease provides the area on which WEHI is located to perform medical research in conjunction with the Hospital.</td>
<td>Assignment, sublease, mortgage or license is not permitted without Melbourne Health’s consent.</td>
</tr>
</tbody>
</table>

* The following concessionary leases are subject to sub-lease arrangements with third parties.

### 27. Contingent liability

WEHI may have legal claims and exposures which arise from the ordinary course of business. There is significant uncertainty as to whether a future liability may arise in respect of these items, or the amount of any such liability.

### 28. Events after the reporting period

The directors are not aware of any other matter of circumstance which has arisen since the end of the financial year which has significantly affected or may significantly affect the operations of WEHI, results of those operations or the state of affairs of WEHI in subsequent financial years.
Governance statement

WEHI is a Public Company Limited by Guarantee registered with the ACNC. WEHI abides by the ACNC Governance Statement. Ultimate responsibility for the governance of the WEHI rests with the Board of Directors. This Governance Statement outlines how the Board meets that responsibility.

Achieving the Mission

The Board’s primary role is to ensure that WEHI’s activities are directed towards its purpose under the Constitution and its mission of ‘Mastery of Disease through Discovery’. The Board ensure that these are achieved in the most efficient and effective way.

Specific Responsibilities of the Board

The Board fulfils its primary role by:

- selecting, appointing, guiding and monitoring the performance of WEHI’s Director;
- approving WEHI’s strategic plan developed in conjunction with the Chief Executive and Senior Management;
- approving operating and capital budgets formulated by the WEHI Director and Management;
- monitoring Management’s progress in achieving the Strategic Plan;
- monitoring Management’s adherence to operating and capital budgets;
- ensuring the integrity of internal control, risk management and management information systems;
- ensuring stakeholders receive regular reports, including financial reports;
- ensuring the Company complies with relevant legislation and regulations; and
- acting as an advocate for the WEHI whenever and wherever possible.

Management’s Responsibility

WEHI’s day-to-day operations and administration are the responsibility of the WEHI Director and Executive Management.

Board Oversight

The Board oversees and monitors Management’s performance by:

- meeting at least four times during the year;
- receiving detailed financial and other reports from management at these meetings;
- receiving additional information and input from management when necessary; and
- assigning to the various Committees of the Board responsibility to oversee aspects of the WEHI’s operations and administration.

Each Board Committee operates under a Charter approved by the Board. These are reviewed and updated as necessary.

Board Members

All Board Members are Non-Executive Directors and receive no remuneration for their services. Appointments to the Board are made to ensure the Board has the right mix of skills and expertise. One Board Member is appointed by the Trustees of the Walter and Eliza Hall Trust and two Board Members are appointed by The University of Melbourne and two by The Royal Melbourne Hospital (Melbourne Health) and up to a further 13 by the Board.

The Company’s Constitution specifies:

- there must be no less than 12 and no more than 18 Directors;
- Directors (except those appointed by The University of Melbourne) are appointed for a maximum of four terms of three years each, after which Directors may be reappointed annually with the unanimous agreement of all other Board Members; and
- the President or Vice President may hold office for an additional period or periods not exceeding six years.

Board and Committee Members receive advice of the terms and conditions of their appointment. Board and Committee Members’ knowledge of the business is maintained by visits to the WEHI’s operations and management presentations.

The performance of individual Board and Committee Members and the Board and Board Committees is assessed regularly.

Risk Management

The Board oversees WEHI’s risk management system, which is designed to protect the Organisation’s reputation and manage those risks that might preclude it from achieving its goals.

Management is responsible for establishing and implementing the risk management system, which assesses monitors and manages operational, financial reporting and compliance risks. The Audit and Risk Committee is responsible for monitoring the effectiveness of the risk management system between annual reviews.

Ethical Standards and Code of Conduct

Board Members, Senior Executives and staff are expected to comply with relevant laws and the codes of conduct of relevant professional and research bodies, and to act consistent with our values and integrity, compassion, fairness and honesty at all times when dealing with colleagues, and others who are stakeholders in our mission.

Involving Stakeholders

WEHI has many stakeholders, including our donors and benefactors, our staff, and students, the broader community, the government agencies who provide us funds and regulate our operations, and our suppliers.

We adopt a consultative approach in dealing with our stakeholders. We get involved in industry forums to ensure governments at all levels are aware of our concerns and our achievements and to remain abreast of industry developments.

Indemnification and Insurance

WEHI insures Directors (and the Company Secretary and Executives) against liabilities for costs and expenses incurred by them in defending any legal proceedings arising out of their conduct while acting in the capacity of Director (or Company Secretary or Executive) of the Company, other than conduct involving a wilful breach of duty in relation to the Company.
Directors’ report

The Directors of WEHI submit this Annual Financial Report of the Company for the year ended 31 December 2020. In order to comply with the provisions of the Australian Charities and Not-for-Profits Commission Act 2012 the Directors report as follows:

Directors and Board Meetings
The names and particulars of the Directors of the Company during or since the end of the financial year and attendance at Board meetings in the year ended 31 December 2020 are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Joined Board</th>
<th>Meetings held while a Director</th>
<th>Meetings Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane S Hemstritch</td>
<td>Chairperson and President of WEHI</td>
<td>2013</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Terence F Moran AC</td>
<td>Vice President of WEHI</td>
<td>2013</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Robert H Wylie</td>
<td>Honorary Treasurer</td>
<td>2014</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Malcolm W Broomhead AC</td>
<td></td>
<td>2014</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>John Dyson</td>
<td></td>
<td>2016</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>James McCluskey AC</td>
<td></td>
<td>2011</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Marie McDonald</td>
<td></td>
<td>2016</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Carolyn Viney</td>
<td></td>
<td>2016</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Shitij Kapur</td>
<td></td>
<td>2017</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Christine Kilpatrick AC</td>
<td></td>
<td>2017</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Pippa Connolly</td>
<td></td>
<td>2019</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Peter Collins</td>
<td></td>
<td>2018</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Sir John Savill</td>
<td></td>
<td>2018</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

The Audit and Risk Committee
The role of the Audit and Risk Committee is to assist the Board in fulfilling its statutory and fiduciary responsibilities with regard to accounting and financial reporting practices, risk management and internal control systems of the WEHI. The Committee met four times during the period under review.

Principal Activities
The WEHI’s principal activity in the course of the financial year was medical research and there has been no significant change in that activity during the financial year.

Financial Results
The financial result from operations was a net surplus of $27,000,000 (31 December 2019 net surplus of $20,060,000). After allowing for the gains from the sale of investments and other grants, donations and bequests, depreciation, and amortisation the overall result for the period was a surplus of $31,436,000 (31 December 2019 surplus of $21,112,000). Tax is not applicable. The Company is Limited by Guarantee, has no share capital and declares no dividends.

Operations
A review of operations of the WEHI is included in the detailed scientific reports.

Environmental Regulations
The WEHI aims to achieve a high standard in environmental matters. The WEHI complies with the Environmental Protection Act in respect of its operations. Discharges to air and water are below specified levels of contaminants and solid waste is disposed of in an appropriate manner. Biomedical waste and sharps are disposed of through appropriately licensed contractors. The Directors have not received notification nor are they aware of any breaches of environmental laws by the WEHI.
Appreciation

The Board wishes to extend its appreciation to the Members of the various Committees (Remuneration and Nomination Committee, Human Research Ethics Committee, Investment Committee, Advocacy and Support Committee, Audit and Risk Committee, Master Planning Committee and the Commercialisation Committee) as well as the many other people including the WEHI Director, staff, students, overseas visitors and honorary workers, who work so tirelessly to advance the Company’s world-wide reputation for excellence in medical research. A table of attendance at the various committees is listed below.

<table>
<thead>
<tr>
<th>Committee attendance</th>
<th>Meetings held while a member</th>
<th>Meetings attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit and Risk Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Robert Wylie (Chair)</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Mr Malcolm Broomhead AO</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ms Pippa Connolly</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Commercialisation Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ms Marie McDonald (Chair)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Dr Leigh Farrell</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Dr Lisa Hennessey</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mr Saul Cannon</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Professor Sir John Savill</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Advocacy and Support Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr John Dyson (Chair)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Dr Paul Cooper</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mr Michael Daddo</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Mr Hugh Hodges</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ms Caroline Johnston</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Ms Andrea Lapidge</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ms Catherine Robson</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Remuneration and Nomination Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Terrance Moran AC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ms Marie McDonald</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ms Carolyn Viney</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Human Research Ethics Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Peter Collins (Chair)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Rev Father Michael Elligate (Deputy Chair)</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Dr John Bonacci</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Dr Vanessa Bryant</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Mr David Freeman</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Dr lan Majewski</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Professor Marc Pellegrini</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Dr Jeanne Tie</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Ms Sarah Galbraith</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ms Terri Lourey</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ms Bree Ridgeway</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Ms Louise Steinfurt</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Ms Jane Fiske</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Investment Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Robert Wylie (Chair)</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Mr Malcom Broomhead AO</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mr Stephen Mericek</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Mr Stephen Milburn-Pyle</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ms Andrew Scott</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ms Fiona Trafford-Walker</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Master Planning sub-committee (created in 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ms Carolyn Viney (Chair)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Ms Pippa Connolly</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mr Terrance Moran AC</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
Auditors’ independence declaration

The Auditors’ independence declaration is included on page 91 of the financial report.

Other Matters

(a) During the financial year there was no significant change in the Company’s state of affairs other than that referred to in the accounts or the notes thereto. In particular Note 1 (a) includes WEHI’s assessment of the impacts of the Coronavirus pandemic on its activities.

(b) There has not been any other matter or circumstance that has arisen since the end of the financial year, that has significantly affected, or may significantly affect the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years.

(c) Disclosure of information regarding likely developments in the operations of the Company in future years and the expected results of those operations is likely to result in unreasonable prejudice to the Company. Accordingly, this information has not been disclosed in this report.

(d) During the financial year the Company paid a premium in respect of a contract insuring the Directors and Officers of the Company against liability incurred as such a Director or Officer to the extent permitted by the Corporations Act 2001. The contract of insurance prohibits disclosure of the nature of the liability and the amount of the premium. The Company has not otherwise, during or since the financial year, indemnified or agreed to indemnify an Officer or Auditor of the Company or any related body corporate against a liability incurred as such an Officer or Auditor.

(e) The Company is a Company of the kind referred to in ASIC Class Order 98/100, dated 10 July 1998, and in accordance with that Class Order amounts in the Directors’ report and the financial report are rounded off to the nearest thousand dollars.

Signed in accordance with a resolution of the Directors made pursuant to s.298(2) of the Corporations Act 2001.

On behalf of the Directors

Jane Hemstritch                    Robert Wylie
President                        Treasurer
Melbourne, 29 March 2021

Directors’ declaration

Directors’ Declaration - per section 60.15 of the Australian Charities and Not-for-Profits Commission Regulation 2013.

The Directors declare that in the Directors’ opinion:

(a) there are reasonable grounds to believe that the registered entity is able to pay all of its debts, as and when they become due and payable; and;

(b) the financial statements and notes satisfy the requirements of the Australian Charities and Not-for-Profits Commission Act 2012.

Signed in accordance with subsection 60.15(2) of the Australian Charities and Not-for-Profits Commission Regulation 2013.

Jane Hemstritch                    Robert Wylie
President                        Treasurer
Melbourne, 29 March 2021
29 March 2021

The Board of Directors
The Walter and Eliza Hall Institute of Medical Research
1G Royal Parade
PARKVILLE VIC 3052

Dear Board Members

The Walter and Eliza Hall Institute of Medical Research

In accordance with the Subdivision 60-C of the Australian Charities and Not-for-profits Commission Act 2012, I am pleased to provide the following declaration of independence to the directors of The Walter and Eliza Hall Institute of Medical Research.

As lead audit partner for the audit of the financial statements of The Walter and Eliza Hall Institute of Medical Research for the year ended 31 December 2020, I declare that to the best of my knowledge and belief, there have been no contraventions of:

(i) the auditor independence requirements as set out in the Australian Charities and Not-for-profits Commission Act 2012 in relation to the audit; and

(ii) any applicable code of professional conduct in relation to the audit.

Yours sincerely

DELOITTE TOUCHE TOHMATSU

Anneke du Toit
Partner
Chartered Accountants
Independent Auditor’s Report to the Members of Walter and Eliza Hall Institute of Medical Research


Opinion

We have audited the financial report of Walter and Eliza Hall Institute of Medical Research ("WEHI" or the "Entity") which comprises the statement of financial position as at 31 December 2020, the statement of profit or loss and other comprehensive income, the statement of changes in equity, the statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies and the declaration by the Directors.

In our opinion, the accompanying financial report of the Entity is in accordance with Division 60 of the Australian Charities and Not-for-profits Commission Act 2012 (the “ACNC Act”), including:

(i) giving a true and fair view of the Entity’s financial position as at 31 December 2020 and of its financial performance for the year then ended; and
(ii) complying with Australian Accounting Standards and Division 60 of the Australian Charities and Not-for-profits Commission Regulation 2013.

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the Auditor’s Responsibilities for the Audit of the Financial Report section of our report. We are independent of the Entity in accordance with the auditor independence requirements of the ACNC Act and the ethical requirements of the Accounting Professional & Ethical Standards Board’s APES 110 Code of Ethics for Professional Accountants (including Independence Standards) (the "Code") that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

The directors are responsible for the other information. The other information obtained at the date of the auditor’s report comprises the Directors’ Report, Governance statement, Statistical summary and Capital Funds included in the Entity’s annual report for the year ended 31 December 2020 but does not include the financial report and our auditor’s report thereon.

Our opinion on the financial report does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed on the other information that we obtained prior to the date of this auditor’s report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.
Responsibilities of the directors for the Financial Report

The directors of the Entity are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards and the ACNC Act and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the ability of the Entity to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Auditor’s Responsibilities for the Audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is 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 the Australian Auditing Standards 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 this financial report.

As part of an audit in accordance with the Australian Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial report, 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 purpose of expressing an opinion on the effectiveness of the Entity’s internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.

- Conclude on the appropriateness of the directors 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 Entity’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 report 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 Entity to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.
Auditor’s Responsibilities for the Audit of the Financial Report (continued)

We communicate with the directors 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.

DELOITTE TOUCHE TOHMATSU

Anneke du Toit
Partner
Chartered Accountants
Melbourne, 29 March 2021
## Statistical summary for the year ended 31 December 2020

<table>
<thead>
<tr>
<th></th>
<th>2020 $'000s</th>
<th>2019 $'000s</th>
<th>2018 $'000s</th>
<th>2017 $'000s</th>
<th>2016 $'000s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Government</td>
<td>64,798</td>
<td>46,298</td>
<td>45,057</td>
<td>45,163</td>
<td>51,079</td>
</tr>
<tr>
<td>Victorian Government</td>
<td>10,311</td>
<td>10,513</td>
<td>10,909</td>
<td>12,739</td>
<td>7,753</td>
</tr>
<tr>
<td>Foreign governments</td>
<td>-</td>
<td>70</td>
<td>22</td>
<td>243</td>
<td>1</td>
</tr>
<tr>
<td><strong>Government revenue</strong></td>
<td>75,109</td>
<td>56,881</td>
<td>55,988</td>
<td>58,145</td>
<td>56,833</td>
</tr>
<tr>
<td>Industrial grants and contracts</td>
<td>13,439</td>
<td>8,689</td>
<td>7,182</td>
<td>4,044</td>
<td>3,227</td>
</tr>
<tr>
<td>Philanthropic grants and fellowships – Australia</td>
<td>9,870</td>
<td>13,399</td>
<td>15,759</td>
<td>7,444</td>
<td>8,804</td>
</tr>
<tr>
<td>Philanthropic grants and fellowships – international</td>
<td>4,649</td>
<td>3,343</td>
<td>6,824</td>
<td>6,468</td>
<td>5,805</td>
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<tr>
<td>Investment income</td>
<td>19,996</td>
<td>24,156</td>
<td>30,063</td>
<td>12,118</td>
<td>13,463</td>
</tr>
<tr>
<td>Royalty income</td>
<td>1,654</td>
<td>7,483</td>
<td>4,027</td>
<td>11,059</td>
<td>12,328</td>
</tr>
<tr>
<td>General revenue</td>
<td>6,842</td>
<td>8,916</td>
<td>8,260</td>
<td>7,560</td>
<td>5,746</td>
</tr>
<tr>
<td>Donations and bequests</td>
<td>11,569</td>
<td>10,373</td>
<td>13,568</td>
<td>9,327</td>
<td>8,816</td>
</tr>
<tr>
<td>Royalty monetisation revenue</td>
<td>38,961</td>
<td>35,633</td>
<td>-</td>
<td>331,082</td>
<td>-</td>
</tr>
<tr>
<td><strong>Non-government revenue</strong></td>
<td>106,980</td>
<td>111,992</td>
<td>85,683</td>
<td>389,102</td>
<td>58,190</td>
</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td>182,089</td>
<td>168,873</td>
<td>141,671</td>
<td>447,247</td>
<td>117,021</td>
</tr>
<tr>
<td><strong>Operating expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>102,547</td>
<td>98,340</td>
<td>90,493</td>
<td>85,944</td>
<td>80,652</td>
</tr>
<tr>
<td>Laboratory operating costs</td>
<td>16,134</td>
<td>19,870</td>
<td>20,038</td>
<td>20,756</td>
<td>19,025</td>
</tr>
<tr>
<td>Laboratory equipment</td>
<td>4,078</td>
<td>3,565</td>
<td>3,352</td>
<td>4,047</td>
<td>3,610</td>
</tr>
<tr>
<td>Building operations</td>
<td>5,092</td>
<td>5,908</td>
<td>5,801</td>
<td>4,849</td>
<td>4,673</td>
</tr>
<tr>
<td>Administration</td>
<td>11,520</td>
<td>8,648</td>
<td>6,715</td>
<td>3,718</td>
<td>5,258</td>
</tr>
<tr>
<td>Fundraising</td>
<td>502</td>
<td>620</td>
<td>475</td>
<td>487</td>
<td>387</td>
</tr>
<tr>
<td>Business development</td>
<td>2,725</td>
<td>1,219</td>
<td>1,261</td>
<td>997</td>
<td>747</td>
</tr>
<tr>
<td>Allowance for credit loss increase / (decrease)</td>
<td>(30)</td>
<td>62</td>
<td>47</td>
<td>(47)</td>
<td>(115)</td>
</tr>
<tr>
<td>Royalty monetisation costs</td>
<td>2,239</td>
<td>10,104</td>
<td>4,755</td>
<td>51,143</td>
<td>-</td>
</tr>
<tr>
<td>Unrealised foreign exchange loss / (gain)</td>
<td>10,282</td>
<td>477</td>
<td>(4,998)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total expenditure</strong></td>
<td>155,089</td>
<td>148,813</td>
<td>128,080</td>
<td>171,894</td>
<td>114,237</td>
</tr>
<tr>
<td><strong>Results from operating activities</strong></td>
<td>27,000</td>
<td>20,060</td>
<td>13,591</td>
<td>275,353</td>
<td>2,785</td>
</tr>
<tr>
<td><strong>Other income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit or (loss) on sale of long-term assets</td>
<td>(135)</td>
<td>297</td>
<td>2</td>
<td>5,002</td>
<td>8,671</td>
</tr>
<tr>
<td>Fair value gain or (loss) on investments</td>
<td>816</td>
<td>5,261</td>
<td>(569)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Donations and bequests capitalised to Permanent Funds</td>
<td>673</td>
<td>1,359</td>
<td>6,510</td>
<td>2,877</td>
<td>5,162</td>
</tr>
<tr>
<td>Grants and donations for capital works</td>
<td>14,953</td>
<td>5,076</td>
<td>1,198</td>
<td>4,330</td>
<td>1,733</td>
</tr>
<tr>
<td><strong>Total other income</strong></td>
<td>16,307</td>
<td>11,993</td>
<td>7,121</td>
<td>12,209</td>
<td>15,566</td>
</tr>
<tr>
<td><strong>Other expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss on impairment write-down of long-term investments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(709)</td>
</tr>
<tr>
<td>Depreciation and amortisation</td>
<td>(11,871)</td>
<td>(10,941)</td>
<td>(9,368)</td>
<td>(9,044)</td>
<td>(8,556)</td>
</tr>
<tr>
<td><strong>Total other expenses</strong></td>
<td>(11,871)</td>
<td>(10,941)</td>
<td>(9,368)</td>
<td>(9,044)</td>
<td>(9,265)</td>
</tr>
<tr>
<td><strong>Net operating surplus</strong></td>
<td>31,436</td>
<td>21,112</td>
<td>11,344</td>
<td>276,518</td>
<td>9,086</td>
</tr>
<tr>
<td><strong>Capital funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent invested capital funds</td>
<td>202,322</td>
<td>198,833</td>
<td>194,181</td>
<td>185,610</td>
<td>181,162</td>
</tr>
<tr>
<td>General funds</td>
<td>394,285</td>
<td>371,193</td>
<td>377,710</td>
<td>378,204</td>
<td>114,306</td>
</tr>
<tr>
<td>Royalty fund</td>
<td>56,135</td>
<td>55,039</td>
<td>48,054</td>
<td>44,410</td>
<td>34,981</td>
</tr>
<tr>
<td>Leadership fund</td>
<td>28,927</td>
<td>27,965</td>
<td>26,557</td>
<td>24,562</td>
<td>23,581</td>
</tr>
<tr>
<td>Discovery fund</td>
<td>5,484</td>
<td>5,271</td>
<td>4,961</td>
<td>4,545</td>
<td>2,682</td>
</tr>
<tr>
<td>Centenary fund</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,101</td>
</tr>
<tr>
<td>Investment revaluation reserve</td>
<td>70,311</td>
<td>67,200</td>
<td>8,211</td>
<td>40,853</td>
<td>34,393</td>
</tr>
<tr>
<td><strong>Total funds</strong></td>
<td>757,464</td>
<td>725,501</td>
<td>659,674</td>
<td>678,184</td>
<td>393,206</td>
</tr>
<tr>
<td><strong>Capital expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>24,195</td>
<td>12,252</td>
<td>22,029</td>
<td>16,078</td>
<td>9,960</td>
</tr>
<tr>
<td><strong>Staff numbers: (equivalent full-time)</strong></td>
<td>2020</td>
<td>2019</td>
<td>2018</td>
<td>2017</td>
<td>2016</td>
</tr>
<tr>
<td>Scientific research staff:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Senior faculty</td>
<td>85</td>
<td>87</td>
<td>80</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>– Postdoctoral scientists</td>
<td>224</td>
<td>213</td>
<td>199</td>
<td>183</td>
<td>188</td>
</tr>
<tr>
<td>– Visiting scientists</td>
<td>32</td>
<td>34</td>
<td>36</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>– Other laboratory research staff</td>
<td>234</td>
<td>235</td>
<td>241</td>
<td>241</td>
<td>252</td>
</tr>
<tr>
<td><strong>Supporting staff:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Other support services</td>
<td>204</td>
<td>202</td>
<td>196</td>
<td>180</td>
<td>162</td>
</tr>
<tr>
<td><strong>Total staff and visiting scientists</strong></td>
<td>778</td>
<td>771</td>
<td>752</td>
<td>730</td>
<td>719</td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td>159</td>
<td>206</td>
<td>192</td>
<td>180</td>
<td>173</td>
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<tr>
<td><strong>Papers published</strong></td>
<td>424</td>
<td>388</td>
<td>417</td>
<td>419</td>
<td>429</td>
</tr>
</tbody>
</table>
Capital Funds

Permanent Named Capital Funds

The following is a complete listing of all permanent funds held and invested by the Institute at 31 December, 2020.

*New donations of capital received in current financial period.

<table>
<thead>
<tr>
<th>Fund Name</th>
<th>2020 $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adair John Bequest (ex DW)</td>
<td>402,965</td>
</tr>
<tr>
<td>Adair John Bequest (ex MF)</td>
<td>76,509</td>
</tr>
<tr>
<td>Alexander R Estate</td>
<td>160,677</td>
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<tr>
<td>Allison-Levick J &amp; H</td>
<td>90,188</td>
</tr>
<tr>
<td>Alston Peter and Julie Florence Fellowship Fund</td>
<td>1,611,203</td>
</tr>
<tr>
<td>Amey AM Estate</td>
<td>38,800</td>
</tr>
<tr>
<td>Anderson KA Estate</td>
<td>288,411</td>
</tr>
<tr>
<td>Anderson NM Estate</td>
<td>17,478</td>
</tr>
<tr>
<td>Angus Dorothy Irene Estate</td>
<td>283,817</td>
</tr>
<tr>
<td>Anonymous</td>
<td>363,290</td>
</tr>
<tr>
<td>Anonymous – Tasmania</td>
<td>6,056</td>
</tr>
<tr>
<td>Anonymous – Victoria</td>
<td>7,473</td>
</tr>
<tr>
<td>Anonymous – Victoria</td>
<td>201,128</td>
</tr>
<tr>
<td>Arnel Florence Janet Maude Estate</td>
<td>58,694</td>
</tr>
<tr>
<td>Arter Myra G Estate</td>
<td>90,239</td>
</tr>
<tr>
<td>Ashford Ivy A Estate</td>
<td>35,722</td>
</tr>
<tr>
<td>Atwell Samuel E Estate</td>
<td>69,890</td>
</tr>
<tr>
<td>Atyeo George &amp; Isobel Fund</td>
<td>51,342</td>
</tr>
<tr>
<td>Baker Alice Lillian Estate</td>
<td>85,075</td>
</tr>
<tr>
<td>Ballantyne JW Estate</td>
<td>813,564</td>
</tr>
<tr>
<td>Barfield WG Estate</td>
<td>55,226</td>
</tr>
<tr>
<td>&quot;Barry Joan Elaine Memorial Fund&quot;</td>
<td>59,526</td>
</tr>
<tr>
<td>Bartlett Mary V Estate</td>
<td>39,135</td>
</tr>
<tr>
<td>&quot;Bates Tim Memorial Diabetes Research Fund&quot;</td>
<td>203,327</td>
</tr>
<tr>
<td>Charles L Bartholomew Estate</td>
<td>162,389</td>
</tr>
<tr>
<td>Bauer Dr Franz Estate</td>
<td>66,841</td>
</tr>
<tr>
<td>Bell Valerie Amy</td>
<td>94,683</td>
</tr>
<tr>
<td>Benjamin EG Estate</td>
<td>62,638</td>
</tr>
<tr>
<td>Bennett LM Estate</td>
<td>39,616</td>
</tr>
<tr>
<td>Berry Ruby C Estate</td>
<td>167,146</td>
</tr>
<tr>
<td>Biderman Cyla Estate</td>
<td>79,777</td>
</tr>
<tr>
<td>Blain BE Estate</td>
<td>127,744</td>
</tr>
<tr>
<td>Bland RT Estate</td>
<td>384,167</td>
</tr>
<tr>
<td>Bock Lindsay William Estate</td>
<td>33,818</td>
</tr>
<tr>
<td>Boothman Alva Estate</td>
<td>785,165</td>
</tr>
<tr>
<td>Borrett M A Estate</td>
<td>610,251</td>
</tr>
<tr>
<td>Bran Eg Estate</td>
<td>222,121</td>
</tr>
<tr>
<td>Brennan EM Estate</td>
<td>69,337</td>
</tr>
<tr>
<td>The Ruby Bryan Memorial Fund</td>
<td>757,540</td>
</tr>
<tr>
<td>Brittain W &amp; Vl Mem Fund</td>
<td>81,708</td>
</tr>
<tr>
<td>Brockhoff Nyon Trust</td>
<td>256,596</td>
</tr>
<tr>
<td>Brough AV Estate</td>
<td>88,269</td>
</tr>
</tbody>
</table>

Brown Isabelle A Estate                         | 91,938 |
Bruce RH Estate                                 | 40,322 |
Buckland William Foundation Fund                | 236,550|
Buckman Olive Estate                            | 28,023 |
Butt C G Estate                                 | 510,938 |
Brumloop LAA Estate                             | 88,011 |
Burley Stanley Estate                           | 71,676 |
Burnet Sir Macfarlane Estate                   | 146,549|
Burns JC Estate                                 | 189,113|
Cahill JL Estate                                | 26,186 |
Callaway LJ Estate                              | 50,143 |
Cambridge Beresford Estate                      | 207,697|
Carlin Freda Evelyn Estate                     | 102,738|
Carling DM Estate                               | 183,545|
Carlson Catherine Estate                       | 92,153 |
Carlson Elizabeth F Estate                      | 104,153|
Carty LEW Charitable Fund                      | 44,296 |
Cato EA Estate                                  | 908,776 |
Cato MC Estate                                  | 738,653 |
*Chapman Debbie Memorial Fund                  | 19,490 |
Chatfield SL Estate                             | 124,676|
Claridge John PG Estate                         | 37,161 |
Clark Lindsay Fund                              | 1,008,409|
Cookbank Clarice BP Estate                      | 27,943 |
Cole DE Estate                                  | 801,091 |
Colles GO Estate                                | 38,963 |
Collie Barbara Estate                           | 155,140|
Collie Betty Rae                                | 217,537 |
Collie George Estate                            | 2,434,302|
Collier Len Estate                              | 57,341 |
Connolly Grace C Estate                         | 132,040|
Cormack Margaret Mary                          | 98,505 |
Cory Joy & Desmond Cancer Research Fund         | 133,400|
Courtney Gwendoline Vera Estate                 | 283,327|
Coutts Dr ELA Estate                           | 132,893 |
Coutts IBM Estate                               | 28,180 |
Craven DA Memorial Fund                         | 1,298,314|
JE Craven & MA Shearer Estates                 | 50,357,167|
Crawford Duncan Estate                          | 17,331 |
Criswick R M Estate                             | 528,529 |
Critchlow Ronald P Estate                       | 309,268 |
Crowley MM Estate                               | 216,108 |
Cubbins SG Estate                               | 92,009 |
Cummings ED Estate                              | 163,816 |
Cutter BE Estate                                | 17,026 |
Darbyshire EU (Ted) Estate                      | 356,314 |
Davey Dorothy Estate                            | 315,268 |
Davidson BI Estate                              | 26,754 |

Davidson EE Estate                             | 30,365 |
Davis FLG Estate                                | 60,710 |
Dawson Anne Marie Estate                        | 8,117 |
Del Cott RAM Estate                             | 267,626|
Deryk SD Estate                                | 72,383 |
Sir Harold Dew and Family Estate                | 862,887|
Dick MRK (Ray) Estate                           | 224,585|
Dickie Pheobe Estate                            | 46,022 |
Dimsey WE Estate                                | 231,623|
Dobbie Myrtle M Estate                          | 42,273 |
Dodgshun GM Estate                              | 168,020|
Dossetor Catherine L Estate                    | 36,553 |
Dowie S Estate                                 | 23,731 |
Drakensberg Trust                              | 2,551,329|
East James Douglas Estate                      | 190,881 |
Edwards Allen Richard Estate                   | 200,757 |
Edwards HHW Estate                              | 255,799 |
Eisner KR                                      | 98,781 |
Ellis GM Estate                                 | 3,878,412|
Emery Harriet Anne Estate                      | 22,019 |
Eva Michael Ross Estate                         | 4,617,329|
Facey Mary Bethune Estate                      | 16,870 |
Fagg Maude V Estate                            | 104,955 |
Fields Ernest Estate                           | 295,058 |
Findlay Winifred Gertrude Estate               | 147,388 |
Fitzgerald Sheila Mary Estate                  | 45,132 |
Ford Ada Joyce Estate                          | 20,684 |
Fraser K Estate                                | 2,137,782|
Gaibraith DA & DV Estate                       | 116,557 |
Gerds Sheila Lesley G Estate                   | 69,987 |
Gibb Geo & Bennett Wm A                       | 432,391 |
Gilbert Augusta Estate                         | 390,717 |
Glider CH Estate                               | 17,230 |
Gillon AM Estate                               | 3,258,907|
*Gilmore Trakka Fund                           | 10,000 |
Girdwood J Estate                              | 256,814 |
Goldman Sachs JB Were Foundation               | 792,646 |
Gordon H & T Estate                            | 115,055 |
Graves GC Estate                               | 28,506 |
Gray Beissie Mavis Fund                        | 27,078 |
Gray Clara Estate                               | 77,773 |
Greig Harry Douglas Estate                     | 543,302 |
Grubb Walter Joseph Estate                     | 40,203 |
Guest Doris Rose Estate                        | 16,910 |
Hackett Dorothy Estate                         | 6,961 |
Hadfield RCS Estate                            | 122,651 |
Hadley AN Estate                               | 1,223,660|
<table>
<thead>
<tr>
<th>Name</th>
<th>Amount</th>
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<tbody>
<tr>
<td>*Mackay, Ian</td>
<td>202,850</td>
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<td>Mackie-Smith CM Estate</td>
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<td>Macleay The Lillian &amp; Kenneth Bequest</td>
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<td>MacNamara Jean Fund</td>
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<td>Mahoney Florence Cancer Fund</td>
<td>181,173</td>
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<td>Malcolm Phyllis Elizabeth Estate</td>
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<td>Maloney Kathleen Margaret Estate</td>
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<td>Mann David Memorial Research Fund</td>
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<tr>
<td>Mansfield Trevor Geoffrey Estate</td>
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<td>Marguicio R Estate</td>
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<td>Mariner Barry Leonard Estate</td>
<td>66,237</td>
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<tr>
<td>McArthur Nellie M Estate</td>
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<td>McCooke Miss MH Estate</td>
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<td>McDonald Charles Thomas</td>
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<tr>
<td>McDougal Phyllis Mable Estate</td>
<td>135,502</td>
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<tr>
<td>McGhee ME Estate</td>
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<tr>
<td>McGregor Amy VK Estate</td>
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<tr>
<td>McGregor Eivira Ruth Estate</td>
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<tr>
<td>McGregor KB Estate</td>
<td>190,842</td>
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<td>Mckay C N Fund</td>
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<td>McKinnon Sheila May Estate</td>
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<td>McLean Ada Myeet Dutton Estate</td>
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<td>McLennan B Estate</td>
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<tr>
<td>McNab M Estate</td>
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<tr>
<td>McNeill Sir James Fund</td>
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<tr>
<td>McRorie Ruby A Estate</td>
<td>83,835</td>
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<tr>
<td>Menagh Thelma Marie Estate</td>
<td>19,507</td>
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<tr>
<td>Miller Lorna May Estate</td>
<td>935,574</td>
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<td>Miller MA Estate</td>
<td>67,096</td>
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<td>Miller Violet Isabella Estate</td>
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<td>Minney DW &amp; NF Fund</td>
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<td>Mitchell, Bettye Victoria Fund</td>
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<td>Mitchell Doris Georgina Mildred</td>
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<td>Mitchell G Fund</td>
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<td>Modern FHW Estate</td>
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<td>Moody E Vaughan Estate</td>
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<td>Moon Ida Alice Estate</td>
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<td>Mooney Carmel Mary, Estate of Moore</td>
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<td>Moore Phyllis Estate</td>
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<td>Morgan DM Estate</td>
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<td>Morris Foundation of Medical Research</td>
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<td>Moss EE Estate</td>
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<td>Muller FG Estate</td>
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<td>Murray Alan Ambrose Estate</td>
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<td>Murray Gwendoline Mary Fund</td>
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<td>Myer Dame Merlyn Estate</td>
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<tr>
<td>Myer Pam Sallmann Foundation</td>
<td>31,262</td>
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<tr>
<td>Nevill Melanie Joy</td>
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<td>Newton Evelyn</td>
<td>20,031</td>
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<td>Newton EM Estate</td>
<td>19,472</td>
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<td>Nicholas Harold George Estate</td>
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<td>Norins Leslie Fund</td>
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<td>Norton M Estate</td>
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<td>Nossal Sir Gustav Fund</td>
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<tr>
<td>Nottingham SG Estate</td>
<td>37,076</td>
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<tr>
<td>Palmer DE Estate</td>
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<tr>
<td>Palmer Ethel Fund</td>
<td>336,931</td>
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<tr>
<td>Parker Barbara Memorial Fund</td>
<td>76,798</td>
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<tr>
<td>Parker Mabel V Estate</td>
<td>86,516</td>
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<tr>
<td>Parsons Kathleen FB Estate</td>
<td>43,801</td>
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<tr>
<td>Patten Ralph &amp; Etty Bequest</td>
<td>325,876</td>
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<tr>
<td>Patterson Gerard A Estate</td>
<td>20,481</td>
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<tr>
<td>Paulin Leukaemia Fund</td>
<td>236,320</td>
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<tr>
<td>Paulin SC Estate</td>
<td>29,680</td>
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<tr>
<td>Payne Henry and Charlotte Fund</td>
<td>1,021,391</td>
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<tr>
<td>Peterson Vera Estate</td>
<td>612,222</td>
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<td>Petley Francis Estate</td>
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<td>Pierce John Lindsay Estate</td>
<td>1,306,116</td>
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<td>Pietsch Dr CH Fund</td>
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<td>Porter Florence JA Estate</td>
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<td>Prater Mabel Edward</td>
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<td>Pritchard DG Estate</td>
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<td>Pyke MA Estate</td>
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<td>Qualtrough Research Fund</td>
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<td>Rae Olive Estate</td>
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<td>Reeves Jessie Estate</td>
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<td>Reid John T Charitable Trusts</td>
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<td>Reiser Erwin Estate</td>
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<td>Richardson DLK Estate</td>
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<td>Rickem EM Fund</td>
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<td>Roberts JI Charitable Fund</td>
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<td>Robertson AT Estate</td>
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<td>Rose Norma J Estate</td>
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<td>Ruppel FE Estate</td>
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<td>Salemann CW Estate</td>
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<td>Sallmann L &amp; E Memorial Fund</td>
<td>27,981</td>
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<td>Santos TS Estate</td>
<td>928,378</td>
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<td>Schack Elsie Edith Estate</td>
<td>135,657</td>
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<td>Scott Annie May Estate</td>
<td>176,815</td>
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<td>Sharp II Estate</td>
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<td>Shaw Eileen Curny Estate</td>
<td>25,102</td>
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<td>Shelton Edgar Estate</td>
<td>879,893</td>
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<tr>
<td>Sidwell OB Estate</td>
<td>2,067,877</td>
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<tr>
<td>Skea Lyndal and Jean Leukaemia Fund</td>
<td>1,090,828</td>
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<tr>
<td>Skinner Phyllis Maye Estate</td>
<td>90,874</td>
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<tr>
<td>Smith Elsie Violet Estate</td>
<td>18,313</td>
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<td>Smorgon Robert &amp; Jack Family Foundation</td>
<td>403,536</td>
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<td>Snow Freda Estate</td>
<td>65,195</td>
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<td>Spence Frank Meldrum</td>
<td>37,161</td>
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<td>Spencer Stanley L Estate</td>
<td>19,820</td>
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<tr>
<td>Stanbrough AE Estate</td>
<td>114,276</td>
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</tbody>
</table>

**Additional Notes:**
- The amounts listed are the grants received by the institutions or foundations.
- The data represents financial statements from the 2020 Annual Report of WEHI.
Fellowship and Scholarship Funds

- Farrant Patricia & John Scholarship Fund 233,395
- *Harris Alan Scholarship Fund 122,160
- JHA Munro Foundation 1,150,681
- Macphee Avis Permanent Fund 58,015
- Mathison G C Research Scholarship 225,250
- *Metcalf Donald Scholarship Fund 1,212,082
- Moffatt Edith Scholarship Fund 2,072,730
- The Sir Clive McPherson Family Centenary Fellowship 7,356,503

PhD Scholarship Funds

- Carty EM Fund 475,381
- Mackay Dr Ian Fund 381,781
- Pearl Paddy Fund 1,668,904
- Speedy Pauline Scholarship Fund 605,107
- Syme Colin Fund 2,392,045
- Wilson Ed Memorial Fund 2,115,459
- The John and Margaret Winterbottom Bequest 786,295

Other Funds

- Anonymous Seminar Award 18,919
- Baiderstone Award 50,127
- Begley - Scientific Integrity and Ethics 78,568
- Gideon Goldstein Fund 1,648,897
- Speedy Pauline Innovation Grant Fund 746,367

Leadership Fund

The Leadership Fund was established in honour of Professors Gustav Nossal, Donald Metcalf, Jacques Miller and Suzanne Cory to provide named Fellowships to nurture the development of outstanding young scientists with the potential to be future leaders of biomedical research. The Cory Fellowship is currently held by Misty Jenkins until 2021. The Leadership Fund at 31 December 2020 included the following permanent funds ($10,000 and over):

- Sir Harold Dew and Family Estate 8,268,705
- Chugai Pharmaceutical Co Ltd 1,721,106
- The Ian Potter Foundation 1,721,106
- L M Archibald Estate 1,147,405
- Albert H Maggs Charitable Trust 1,122,340
- Helen Macpherson Smith Trust 688,442
- Anonymous 573,702
- Anonymous 573,702
- E Vaughan Moody Estate 573,702
- The Broken Hill Proprietary - Company Limited 573,702
- J B Were & Son Charitable Fund 573,702
- Eunice L Lambert Estate 564,357
- Betty Eunice Stephens Estate 386,386
- National Australia Bank 344,222
- Victor Smorgon Charitable Fund 252,428
- The Sidney Myer Fund 206,534
- Leslie D W Stewart Estate 168,857
- Joe White Bequest 156,048
- Krongold Foundation Pty Limited 114,741
- Professor Sir Gustav Nossal 114,741
- The Scобie and Claire - Mackinnon Trust 114,741
- The R & J Law-Smith Gift 68,845
- National Mutual Holdings Limited 68,845
- Pacific Dunlop Ltd 68,845
- Sheila R White Estate 67,881
- Coles Myer Ltd 57,369
- James Kirby Foundation 57,369
- Arthur Andersen Co Foundation 45,894
- Arthur Robinson & Hedderwicks 45,894
- H B Kay Estate 22,949
- Stephelle Pty Ltd 22,949
- C M Waite 22,949
The year at a glance (Excluding monetisation and unrealised foreign exchange losses)

**Income**
- Australian Government: 45%
- Victorian Government: 7%
- Philanthropic grants, fellowships - Australia: 7%
- Philanthropic grants, fellowships - overseas: 3%
- Donations and bequests: 8%
- Investment income: 14%
- Other income: 16%

**Expenditure**
- Scientific laboratories: 59%
- Business development: 3%
- Strategic initiatives: 11%
- Fundraising: 1%
- Administration: 8%
- Building operation: 5%
- Support laboratories: 13%

**The Year In Brief**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
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<tbody>
<tr>
<td>Income for operations</td>
<td>$182,089</td>
<td>$168,873</td>
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<tr>
<td>Expenditure in operations</td>
<td>$155,089</td>
<td>$148,813</td>
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<td>Net surplus (deficit) from operations</td>
<td>$27,000</td>
<td>$20,060</td>
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<tr>
<td>Number of staff and visiting scientists</td>
<td>778</td>
<td>771</td>
</tr>
<tr>
<td>Number of postgraduate students</td>
<td>159</td>
<td>206</td>
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<tr>
<td>Total staff and students (EFT)</td>
<td>937</td>
<td>977</td>
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</table>
Publications

**ATB** Advanced Technology and Biology division
**BIO** Bioinformatics division
**BCBC** Blood Cells and Blood Cancer division
**CBSC** ACRF Cancer Biology and Stem Cells division
**CBD** ACRF Chemical Biology division
**EDD** Epigenetics and Development division
**IMM** Immunology division
**IDID** Infectious Diseases and Immune Defence division
**INFL** Inflammation division
**PONC** Personalised Oncology division
**PHI** Population Health and Immunity division
**SBD** Structural Biology division
**USD** Ubiquitin Signalling division

Number of publications:

Primary: 330
Review: 95
Books/Chapter: 5
Total: 430

Primary


22. Bennett MF, Oliver KL, Regan BM, Bellows ST, Schneider AL, Rafehi H, Sikta N, Crompton DE, Coleman M, Hildebrand MS, Corbett MA, Kros T, Geck J, Scheffer IE, Berkovic SF, Bahlo M. Familial adult myoclonic epilepsy type 1 SAMD12 TTTCA repeat expansion arose 17,000 years ago and is present in Sri Lankan and Indian families. European Journal of Human Genetics 2020 28(7):973-978. PHI BIO


56. Dans MG, Weiss GE, Wilson DW, Sleebes BE, Crabb BS, de Koning-Ward TF, Gilson PR. Screening the medicines for Malaria Venture Pathogen Box for invasion and egress inhibitors of the blood stage of *Plasmodium falciparum* reveals several inhibitory compounds. *International Journal for Parasitology*. 2020 50(3):235-252. CBD


175. Loering S, Cameron GJ, Bhatt NP, Belz GT, Foster PS, Hansbro PM, Starkey MR. Differences in pulmonary group 2 innate lymphoid cells are dependent on mouse age, sex and strain. *Immunology and Cell Biology*. 2020 Dec 8. (epub ahead of print) IMM


264. Sheikh AA, Groom JR. Transcription tipping points for T follicular helper cell and T-helper 1 cell fate commitment. Cellular & Molecular Immunology. 2020 Sep 30. (epub ahead of print) IMM


287. Trevelyan SJ, Brewster JL, Burgess AE, Crowther JM, Cadell AL, Parker BL, Croucher DR, Dobson RCJ, Murphy JM, Mace PD. Structure-based mechanism of preferential complex formation by apoptosis signal-regulating kinases. Science Signaling. 2020 13(622)INFL


290. Trussart M, Teh CE, Tan T, Leong L, Gray DH, Speed TP. Removing unwanted variation with CytofRUV to integrate multiple CyTOF datasets. eLife. 2020 9:e59630. BIO IMM


293. Tyebji S, Hannan AJ, Tonkin CJ. Pathogenic infection in male mice changes sperm small RNA profiles and transgenerationally alters offspring behavior. Cell Reports. 2020 31(4):107573. IDID


**Review/Book/Chapter**


341. Belz GT. Elucidating specificity opens a window to the complexity of both the innate and adaptive immune systems. *Viral Immunology*. 2020 33(3):145-152. IMM


387. Miller JFAP. The function of the thymus and its impact on modern medicine. *Science.* 2020 369(6503) IMM


Help stop Parkinson’s disease

Parkinson’s disease is a neurodegenerative condition, with many debilitating symptoms that worsen over time.

More than 80,000 Australians live with Parkinson’s disease. While current therapies can help to reduce symptoms, there is presently no cure.

For most people, the trigger for Parkinson’s disease is not known. The death of certain nerve cells causes the symptoms of Parkinson’s disease, which include progressive difficulty in controlling body movement, as well as impacts on other body systems including the bowel, bladder, sense of smell, cognition and emotional wellbeing. Parkinson’s disease can also lead to dementia.

By the time Parkinson’s disease is diagnosed, a large proportion of nerve cells have already been lost. While there are treatments that can alleviate some symptoms, nothing can stop the progression of Parkinson’s disease.

WEHI is committed to discovering the causes of Parkinson’s disease and how to stop it.

To take on this challenge, WEHI has assembled a highly collaborative research program within its Healthy Development and Ageing Theme. The multidisciplinary research team – including world-leading biologists, clinicians, chemists and statisticians – covers a wide spectrum of medical research, from fundamental discovery right through to the development and testing of treatments and diagnostic approaches.

WEHI’s researchers are tackling Parkinson’s disease by investigating its:

• cause – understanding the complex causes of nerve cell death;
• diagnosis – applying scientific knowledge and state-of-the-art technologies to enable earlier and more accurate detection and diagnosis; and
• treatment – alleviating the devastating symptoms and stopping nerve cells from dying.

With your vital support, WEHI’s researchers can move even closer to improving the lives of people living with Parkinson’s disease.

For more information about supporting WEHI please contact:

Ms Deborah Carr
Head of Philanthropy
03 9345 2100 or carr.d@wehi.edu.au

W www.wehi.edu.au
f WEHIresearch
p WEHI_research
o WEHI_research
f WEHImovies
i Walter and Eliza Hall Institute
Please, help stop Parkinson’s disease

Parkinson’s disease is one of the most common neurodegenerative diseases in Australia – and it is becoming more common. Better approaches for diagnosing and treating this complex condition are urgently needed.

WEHI has assembled a highly collaborative and multidisciplinary team to tackle Parkinson’s disease, ranging from fundamental discoveries about its biology right through to developing vital new diagnostics and treatments.

Your financial support will enable WEHI’s researchers to move closer to providing much-needed relief and hope to those impacted by this debilitating disease.

To donate today, please complete and return this coupon.

You can also call the Fundraising and Philanthropy Team on 03 9345 2403 or visit wehi.edu.au
Yes, I want to help stop Parkinson’s disease

☐ $100  ☐ $250  ☐ $500  ☐ $1000  ☐ $2500  My choice $ ............

☐ Cheque (made payable to The Walter and Eliza Hall Institute of Medical Research)

☐ Visa  ☐ MasterCard  ☐ American Express

Card No


Expiry date


Cardholder’s name ..................................................................................................................................

Cardholder’s signature ................................................................................................................................

Title .......... First name .................................... Last name ..........................................

Address ..........................................................................................................................................................

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Phone .................................................... Mobile ..........................................................

Email .............................................................................................................................................................

☐ I would like to join a discovery tour to see laboratories in action
☐ Please send me information on making a gift to WEHI in my will
☐ I have made a gift to WEHI in my will
☐ I would like my donation to remain anonymous

Your support helps us improve lives

Mailing address for all donations:

Walter and Eliza Hall Institute of Medical Research

Reply Paid 84760 (no stamp required)

Parkville Vic 3052

To make a secure online donation visit www.wehi.edu.au/donate

Alternatively, you can make a donation or discuss how you can become involved by calling us on (03) 9345 2403.

WEHI protects your privacy in accordance with the Information Privacy Principles of the Information Privacy Act 2000. WEHI’s privacy policy is available at www.wehi.edu.au.
Augmented reality

Unlocking the experience is easy:

Step 1:
Search for the free WEHI AR app on the Apple or Google Play store, and download to your smartphone or tablet. If you downloaded a previous version of the app, you may need to update it. (Check store for phone and OS requirements.)

Links to the app are also provided at wehi.edu.au/wehiar

Step 2:
Open the WEHI AR app and allow camera access. NB: The app cannot work without access to your smartphone’s camera. If permission is rejected or missed, you will need to grant access in your phone’s system preferences before you can use the app.

Step 3:
Hold your mobile device over the cover image while the app is active and watch the cover image come to life.

Want more?
There are additional augmented reality experiences embedded in images on pages 5, 22, 25 and 34. Just look for the augmented reality symbol.

Questions?
Email communityrelations@wehi.edu.au or visit wehi.edu.au/wehiar

What is augmented reality?
Augmented reality is an interactive experience adding layers of digital information such as videos, graphics and sound to our view of the real world.

Cover image
Antibodies binding the SARS-CoV-2 virus.
Animation by Dr Drew Berry, WEHI.TV

COVID-19 is caused by the SARS-CoV-2 virus. In this image, which is based on scientific data, antibodies – an important part of our immune defences – are shown in orange and purple, binding to ‘spike proteins’ on the surface of SARS-CoV-2 virus (shown in teal and yellow). Spike proteins are critical for SARS-CoV-2 to enter human cells, and this can be blocked by specific antibodies – breaking the infection cycle.

WEHI researchers are part of a consortium that is developing an ‘antibody cocktail’ that prevents SARS-CoV-2 from entering cells, which may have applications for preventing or treating COVID-19. You can read more about this research towards antibody-based ‘biologics’ therapies for COVID-19 on pages 14 and 15.

All photos used in this annual report were taken following the recommended social distancing and mask-wearing guidelines applicable at the time of the photo.