YOUR IMPACT OF GIVING
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Cover: Associate Professor Wai-Hong Tham (Division Head, Tham Lab, Infectious Diseases and Immune Defence division) with Dr Phill Pymm and Dr Melanie Dietrich.

Opposite: WEHI President, Mrs Jane Hemstritch (L) and Director Professor Doug Hilton AO.

All photos used in this report were taken following the recommended social distancing and mask-wearing guidelines applicable at the time of the photo.

We acknowledge the traditional owners and custodians of the land on which our campuses are located, the Wurundjeri people of the Kulin Nation, and pay our respects to their elders past, present and emerging.

Artwork (left): In Your Hands by Robert Young, commissioned by WEHI.

The Walter and Eliza Hall Institute of Medical Research. ABN: 12 004 251 423.
Thank you for your support

We would like to thank you for your generous support over the past year. Your donations have empowered some of the world’s brightest minds to achieve brilliant medical research in the most uncertain of times.

The COVID-19 pandemic has been difficult for all of us. A particularly important skill you learn early in your scientific training is resilience. The ability to continue exploring a question even when met with extreme doubts and difficulties. This resilience has shone brightly throughout the challenges of 2021 as WEHI researchers not only continued ground breaking research, but went above and beyond their discoveries.

Within these pages you will read about just some of the amazing WEHI research that you have enabled. Your support has moved us closer to improved cancer treatments using immunotherapy and shone a light on complex and difficult diseases such as the rare genetic condition NF2. Your support helped WEHI establish two new collaborative centres:

- The Brain Cancer Centre (which was founded by Carrie’s Beanies 4 Brain Cancer and established with support from the Victorian Government) will enable the brightest minds from many organisations to come together to end brain cancer as a terminal illness; and
- The Centre for Biologic Therapies, established in partnership with CSL, which will develop improved treatments for many diseases.

Through your stories, we have learnt how your long term WEHI connections inspire your giving. It is especially humbling and deeply moving to read the stories behind two significant gifts in Wills we received last year. The legacies of John and Pat Farrant and siblings, John and Mary Thompson will live on through the work they’ve supported at WEHI. Their – and your – stories give us a constant and ever-important reminder of the power of philanthropy.

All donations are greatly appreciated and go far beyond their monetary value; they inspire hope and provide vital encouragement to our scientists. The idea that someone who may not know them, who may not deeply understand the science, believes that they will make a discovery that will one day benefit humanity is exceptionally inspiring.

We hope that these pages make you proud of what we have achieved together. We hope that you will be inspired and continue to partner with us. Thank you for all you do for WEHI, for our scientists and for our community. Together we can drive vital discoveries that will help us live longer, healthier lives.

Professor Doug Hilton AO  
Director, WEHI

Jane Hemstritch  
President, WEHI
Thank you!

In 2021 WEHI received $61.66M in donations, grants and bequests from you! WEHI ensures that 100 per cent of your donated funds go to the area of research you have selected to support.

6,700 gifts received
2,014 new donors joined us
3,701 donors gave

$43.5m Research Programs
$550k Equipment and Infrastructure
$1m Fellowships and Scholarships
In mid-2021, Associate Professor Matt Call's lab was at a crucial juncture in its work into CAR T-cell therapy, an innovative form of immunotherapy that engineers a patient’s own immune cells to kill cancer cells.

The Call lab, co-directed by Associate Professor Melissa Call, was on the verge of advancing its work into reducing the toxicity associated with the therapy to preclinical trials in blood cancer and brain cancer models. Then the NHMRC funding supporting the project ran out – the research was in a holding pattern.

However, support from a “pretty cool funding model” soon arrived, Associate Professor Call said.

Investment company Hearts and Minds Investments Limited (HM1) has a dual purpose. “It delivers investment returns for its shareholders like any investment company, but also provides a social return in the form of funding medical research,” HM1 CEO Paul Rayson said.

Its six fund managers, which includes TDM Growth Partners, provide their expert investment recommendations pro bono which enables HM1 to donate more than $12 million each year to medical research.

The TDM Foundation, the charitable arm of TDM Growth Partners, recommended WEHI join the HM1 stable after reviewing almost 60 possible medical research institutes and asking a shortlisted number for detailed research proposals. “In making their selection HM1 and the TDM Foundation look for excellence in their field, a track record of success and discovery, and organisations that have scale and are well-governed”, Paul said.

HM1 and the TDM Foundation appreciated WEHI’s innovative approach to research, its willingness to take risks, and to collaborate with other related organisations in pursuit of common good.

HM1 is providing $600,000 over two years to support the Call lab’s project.

“Three outstanding researchers are now supported to begin the next phase,” Associate Professor Call said. “It’s a great example of how philanthropy gets a project off the ground and also bridges really crucial junctures in research.”

CAR T-cell (Chimeric Antigen Receptor) therapy “works absolutely beautifully” on a small subset of specific blood cancers, but its broader use as a front-line treatment remains limited by life-threatening toxicities. The lab is re-designing aspects of the therapy to make it safer.

“It’s exciting that HM1 and TDM can partner to hopefully further this targeted cell therapy and potentially broaden the application to a whole range of cancers,” Paul said.

Paul is yet to meet the researchers due to COVID-19 restrictions but is looking forward to visiting the lab. “We hope it becomes a long-term partnership with WEHI. We’re very aware that research takes a long time to achieve a breakthrough,” he said.


‘Cool’ funding model gives vital support to lab
An enduring passion for medical research

A $26 million gift from the Estate of Lesley Patricia Farrant will supercharge an area of ever-growing importance in health and medical science: data research. The funds from the 2021 bequest will enable WEHI to develop state of the art computer science capabilities with the aim of understanding and curing disease. Enhanced uses of artificial intelligence and machine learning facilitates an environment for transformative discoveries to be made.

Lesley Patricia Farrant (Pat) passed away in 2019 at nearly 100 years of age. Pat and her late husband John Farrant had a passion for medical research and were dedicated and treasured supporters of WEHI.

Pat graduated from the University of Melbourne with a Bachelor of Arts, and a Diploma in Social Work. She enjoyed a distinguished career as a prominent and leading social worker in Victoria, eventually being appointed Chief Social Worker for Victoria in the Department of Repatriation.

In 2018 Pat was recognized in the Queen’s Birthday Honours as a Member of the Order of Australia “for significant service to the community through philanthropic contributions and social welfare roles, and to animal protection”. John was interested in science his entire life, even building a 150mm telescope with his grandfather as a young a boy. He went on to graduate with First Class Honours in Physics from the University of Western Australia in 1941, later earning a Master of Science in 1945.

John made the move to Melbourne to work with the Commonwealth X-ray and Radium Laboratory until he joined the CSIR Division of Industrial Chemistry. Eventually, he was placed in charge of the Electron Microscopy group and went on to become Chief Research Scientist for the CSIRO.

Both Pat and John had prestigious and rewarding careers. Professor Doug Hilton believes that an investment in supporting innovative and high impact scientific technologies is the ideal legacy for Pat and John.

“I think Pat and John would be so proud of the impact their gift will have on the future of medical research at WEHI”, says Professor Hilton.
In October 2021, WEHI and its longstanding collaborator CSL announced a new centre specialising in a field that is revolutionising the treatment of cancer, inflammatory and immunological disorders, and infectious diseases including SARS-CoV-2.

The new Centre for Biologic Therapies, based at WEHI, aims to generate high-quality and clinic-ready therapeutic antibodies against novel targets in human disease. It combines WEHI's expertise in immunology, cancer, inflammatory disorders and infectious diseases with CSL's world-class human antibody library and experience in biologic drug discovery and development, as one of the world's leading biotech companies.

Biologics are made in living systems to mimic natural components of our body and cells. They encompass a wide range of therapies including vaccines, antibody drugs that work by flagging diseased cells for destruction by the immune system, and cell therapies that involve the manufacture and transplantation of enhanced patient or donor cells to treat disease.

The development of the new Centre has been made possible through the philanthropic support from the Estate of John Thompson and Mary Helena Thompson.

John and Mary Thompson were brother and sister who lived in Tamworth, NSW. The pair were very close and had no other siblings, nor did they have families of their own. Their mother died when Mary was 11, it is thought with pancreatitis.

John died in 2018 with an aggressive brain cancer, aged 84. Mary passed away in 2020, aged 83.

Mr Stephen Peel, executor of their estate, said John and Mary had supported numerous charities in their lifetimes. “They were private and caring people,” Stephen said. “John, the absolute gentleman, looked after the farm, Mary looked after the accounts, and they both looked after each other. They were wonderful people who have left an amazing legacy.”

WEHI director Professor Doug Hilton said the generous funding would not only support researchers and their vital work, it would also benefit the health of patients using the treatments developed from it for decades to come.

“We’re incredibly grateful to have funding from the John and Mary Thompson Estates to support the establishment of the Centre,” he said.
When the co-trustees of the Dyson Bequest, Rose Gilder and John Dyson, started to consider supporting medical research in 2009, WEHI was their first stop.

Successful long-term Melbourne stockbroker Bruce Dyson, who established the Foundation in 2000 with his wife Jane, Rose’s mother, had a passion for medical research. John, his nephew, had previously met Professor Doug Hilton, who became the current WEHI director.

“Doug spoke to John and I about the number of women dropping out of science and wondered if we’d consider supporting female researchers – we were immediately interested,” Rose said.

The Dyson Bequest Fellowship has backed three female WEHI researchers since then.

“The Fellowship supports early-career female medical researchers and provides a $500,000 commitment over five years, giving them certainty around their funding that lets them get on and do what they do best,” John said.

Associate Professor Gemma Kelly is the current Fellow. She follows Associate Professor Tracy Putoczki (2015) and Professor Marnie Blewitt (2010).

John and Rose, who enjoy a strong relationship with WEHI, meet with their medical researcher at least once a year – online during COVID times – to hear their progress. “It’s fascinating getting insights into the specific work these women do and to follow it for five years,” Rose said.

“I think all of them will have huge impacts on the quality of people’s lives,” John said. “The thing I love about medical research is the leverage – you support one researcher and one lab and if they are successful their work can benefit hundreds of thousands of people.”

Associate Professor Kelly’s lab is working towards improving treatment for people with aggressive blood diseases. Her lab has been investigating resistance to BH3-mimetic drugs, which are now in clinical trials for treatment of certain blood cell-derived cancers.

Last year, researchers found that mutations in a gene that prevents tumour growth, called p53, can impact the response of blood cancers to BH3-mimetic drugs. “We found that mutations in this protein decrease the optimal long-term responses to BH3 mimetics used to treat blood cancer,” Associate Professor Kelly said.

“Mutations in p53 are found in many cancers and our research suggests that treating these blood cancers with combinations of different BH3-mimetics drugs may achieve better long term responses in patients,” Associate Professor Kelly said. “They’re really exciting findings! It’s been really nice to discuss the research and results with Rose and John: they’re so enthusiastic about what we’re doing.”

“The Fellowship means a huge amount to me. It means I can put in place long-term goals and projects.”

The Dyson Bequest Fellowship has also enabled Associate Professor Kelly to fund talented postdoctoral scientist, Dr Sarah Diepstraten, and help progress her career.

John Dyson is currently on the WEHI board.
In 2015, infectious diseases researcher Professor Marc Pellegrini commenced research into a virus closely related to HIV and endemic to Indigenous communities in Central Australia. The Human T-Leukaemia virus-1 (HTLV-1) infects up to 60 per cent of people in some communities – the highest levels globally.

“HTLV-1 is an urgent issue because of the disproportionate amount of disease in the Indigenous population with no vaccines and no drugs to treat the infection,” Professor Pellegrini said. “We knew from our extensive work on HIV that this could be a preventable disease.”

The virus, which interferes with immune cells, can cause leukaemia, cancer and paralysis, and commonly is identified in people with particularly bad cases of pneumonia or bronchitis.

Joining forces with Professor Damien Purcell, a virologist at the University of Melbourne and Associate Professor Lloyd Einsiedel, a physician working in Indigenous communities in Alice Springs, Professor Pellegrini and his lab team embarked on intensive research to find a solution.

In 2021, Professor Pellegrini and his team made a profound discovery. Results of their laboratory studies determined that combining two existing HIV drugs cured HTLV-1 infection in 80 per cent of cases. The results of this research are to be published in a prestigious journal, and will soon be taken to human clinical trials. “It’s very exciting and imperative that we have found a potential solution,” Professor Pellegrini said.

To support this project, Professor Pellegrini is leading a research team to develop a portable, ‘point-of-care’ diagnostic device called c-FIND. This device can identify infections, including HTLV-1 in minutes, rather than the standard weeks. Additionally, it can be loaded into the boot of a car and driven into remote communities. Professor Pellegrini is developing the device with collaborators and Axxin Pty Ltd. Pilot trials will be undertaken after consultation with Indigenous elders.

Professor Pellegrini credits the support of three philanthropic organisations with propelling the drug therapy and diagnostic device research: the Drakensberg Trust, the Phyllis Connor Trust, and the Erica Foundation.

“Philanthropy was absolutely critical to us being able to progress this work,” he said.

Benalla GP Dr Gerard Brownstein, who administers the Drakensberg Trust with siblings David and Elizabeth, was shocked to learn of the prevalence of HTLV-1 in Indigenous communities. “You don’t often think of lab work as necessarily being something that is about social justice but that’s what it is at its heart,” he said.

Gerard’s father Eddie Brownstein, a renowned Horsham surgeon, established the Drakensberg Trust in 1978 from inherited money and donated to social justice causes and medical research, including WEHI. Before his death in 2014, he had a decades-long personal relationship with WEHI, during which time he sat on WEHI’s Human Research Ethics Board. “WEHI has been very welcoming to us, too,” Gerard said. “Meeting up with the Infectious Disease team over morning tea has become a family occasion we all look forward to. These updates are always inspiring.”

Infectious disease work is about social justice, donor says

Above: Drakensberg Trust administrators, David, Gerald, John, Michael, Elizabeth, Catherine and Peter with their extended families visit WEHI. Opposite: Mr John Dyson (L) and Associate Professor Gemma Kelly.
Tradition of giving to medical research helps bright scientists

Jenny Tatchell has been a major supporter of WEHI for nearly twenty years and is passionate about supporting female researchers as well as promising research projects via the Jenny Tatchell Innovation Grants.

Jenny, a former nurse, was initially interested in ovarian cancer as a field to support; her mother died of ovarian cancer. But since learning of all the different research areas at WEHI, Jenny has been open to suggestions about which research is in the greatest need of support.

“It’s interesting to know that only around 10 per cent of applications to government funding schemes are successful,” she says.

WEHI’s Innovation Grants program supports early career researchers who miss out on government funding. The grants are specifically awarded to the highest-ranking ‘near misses’.

In 2021 the Jenny Tatchell Innovation Grant supported Dr Angus Stock’s work into a drug to counter fibrosis, a major cause of mortality and morbidity in cardiovascular disease.

Jenny shared a tradition of giving to medical research with her late partner, Pauline Speedy. Between them they’ve boosted the careers of many WEHI scientists and formed a lasting connection with the Institute. Pauline sadly passed away in 2016, but her generous bequest continues to support research, including the Pauline Speedy Innovation Grant.

Jenny says she enjoys being taken on an intellectual journey and learning about all kinds of diseases. “WEHI doesn’t ‘dumb down’ the information it sends out,” she says. “Learning about things like apoptosis and T cells as an adult is fascinating. Even the Annual Report is a joy to read – who looks forward to getting an annual report?”

Jenny also enjoys hearing about research at the Annual General Meeting and other events, as well as on lab tours. “Just meeting inspiring minds, people who are absolutely on their game, is invigorating”, she says.

As a regular visitor to WEHI, she is well known to a number of researchers. “I take my hat off to her,” said Associate Professor Ian Majewski, who recently talked to Jenny about his research that aims to shine a new light on the ageing process.

“Jenny’s been a long-term supporter across many different areas and is having a big impact on researchers throughout the Institute.”
Associate Professor Ian Majewski’s team is developing ways to model the natural ageing of the human genome to reveal how DNA damage triggers diseases such as cancer.

“In effect, we’re trying to speed up the molecular clock so we can study biological processes that normally occur over decades,” he says. “I’m hopeful our work will shine a new light on the ageing process.”

There’s quite a struggle to get support for discovery research. Philanthropic donations also play a really important role in funding research that government bodies sometimes won’t.”

“Philanthropic support provides an important boost of confidence for young researchers, as the donors stand by them, get interested in the projects and bring a strong sense of optimism.”

Associate Professor Majewski’s project will focus on a form of DNA damage called methylation damage, which accumulates as we age and makes a major contribution to inherited diseases and cancers.

“We’ve demonstrated that disrupting a DNA repair gene, called MBD4, enhances methylation damage – providing the first realistic model of accelerated genome ageing,” he says.

“This system can be used to study complex patterns of cell expansion that normally occur over decades in people.

“Understanding the links between DNA damage and cancer initiation should help us to identify individuals at risk of cancer and to develop screening approaches to spot the disease early.”

Dr Angus Stock says his investigations into a potential treatment for cardiovascular disease would simply not happen without the Jenny Tatchell Innovation Grant.

“This grant really enables our work,” he says. “It’s rare to receive good news when it comes to research funding – the email about the grant was one of the best I’ve had in a long time!”

Dr Stock says the one-year funding allows him to take a bold approach to investigating fibroblasts, the cells that cause fibrosis, a major driver of mortality and morbidity in cardiovascular disease.

Fibrosis is characterised by the excessive deposition of proteins within the heart and can cause the heart to stiffen, block the vessels or disrupt electrical signaling.

Dr Stock’s laboratory has previously discovered that a specific signaling pathway directly activates fibroblasts.

His team has demonstrated this pathway can be disrupted by a widely used drug called Rapamycin, which could potentially be used to ‘deactivate’ disease-causing fibroblasts and ultimately disable their potential to create fibrosis.

“The identification of an effective anti-fibrotic therapy has the potential to significantly improve the health outcomes of heart disease patients.”
A brighter future for brain cancer patients

Three years ago, WEHI and long-term supporter Carrie’s Beanies 4 Brain Cancer (CB4BC) came together to discuss an ambitious vision: to make this devastating disease treatable and survivable so all brain cancer patients can have hope.

Director and General Manager of CB4BC, Sam McGuane, said when he and Carrie Bickmore met with WEHI Director Professor Doug Hilton, the aim was to centralise investment into an idea that could create a radically different research strategy.

That idea came to fruition. In October 2021, The Brain Cancer Centre was founded by CB4BC and established in partnership with WEHI with support from the Victorian Government. The Centre is multidisciplinary and comprehensive in its approach, spanning discovery research, translational research, clinical trials, data and tissue banking, and quality-of-life research.

“The Centre’s number one aim is to end brain cancer as a terminal illness by both attracting and retaining talent, so we can invest with a long term commitment in transformative brain cancer research,” said Sam, who became the Centre’s inaugural General Manager. “This is an environment that is focused on progress, impactful ideas and discoveries that can translate into outcomes for patients,” he said.

Prior to establishing The Brain Cancer Centre, CB4BC had already been funding brain cancer research in Associate Professor Misty Jenkins’ lab at WEHI, helping to advance studies in immunotherapy.

The need for a new approach is pressing. While advances in other cancers have been celebrated over the years, brain cancer survival rates have barely changed in three decades. Sadly, 80 per cent of patients diagnosed with brain cancer will die within five years.

Planning the Centre took two years, during which time other partners including Monash University, Murdoch Children’s Research Institute, Peter MacCallum Cancer Centre, The Royal Children’s Hospital, The Royal Melbourne Hospital, University of Queensland and VCCC Alliance joined the Centre.

“We’re organising our investment into four key research themes: Pathways to new medicines, blood-brain barrier research, new cancer models, and new approaches to immunotherapy,” Sam said.

Twelve research projects will take place within the four themes, each spanning three to five years.

A dedicated, multidisciplinary brain cancer lab is being created at WEHI as part of the Centre to generate fundamental research discoveries, and also to give newly diagnosed patients access to a precision medicine platform, tailored to their particular type of brain cancer, in real time.
Late in 2021, WEHI researchers solved a decade-long mystery: a critical protein linked to Parkinson’s disease could help fast-track treatments for the incurable disease.

The protein PINK1 is known to play a critical role in early onset Parkinson’s disease. The research produced the first-ever ‘live action’ view of PINK1, providing a detailed blueprint for the discovery and development of therapeutic agents that could help to slow or even stop the progression of the disease.

Professor David Komander, who works with WEHI’s Parkinson’s Disease Research Centre and who co-led the research, said his lab’s discovery paved the way for developing therapeutic agents that ‘switch on’ PINK1.

The neurodegenerative disease, which has symptoms including tremors, slow movement and imbalance, is caused by the death of dopamine-producing cells in the brain. More than 10 million people worldwide are living with it, including more than 80,000 Australians. Available therapies are only able to treat and alleviate symptoms rather than check its progression.

The multidisciplinary, patient-focused Parkinson’s Disease Research Centre is generously supported by former WEHI Board President and distinguished business person Mr Leon Davis AO, and his wife Annette, among other philanthropists.

Leon said he and Annette were always looking for ways to help organisations within their community, and medical research stood out. “I know and admire the people at WEHI, so it’s pretty easy to support them,” he said.

Leon and Annette have supported the Centre’s research since its inception three years ago. “The Centre was something new and needed starting up,” Leon said. “My wife and I consider we’ve had very fortunate lives and it means a great deal to us that we are able to help people along the way.”

“If we can help WEHI in a small way, I’m delighted to do that.

“I get so much fulfillment from giving that I think I’ve got the better side of the deal!”

Leon was a member of the WEHI Board for 12 years, including 10 years as President, during which he helped guide WEHI’s $190 million building redevelopment. The public lecture theatre, the Davis Auditorium, is named after him.
When Carol Richardson (née Austin) joined the Walter and Eliza Hall Institute of Medical Research in 1962 to work in Professor Gustav Nossal’s laboratory, it was a heady time for the Institute – and for the young scientist.

During her four years at WEHI, Carol was surrounded by scientific luminaries working on pioneering biomedical science.

Sir Macfarlane Burnet had been jointly awarded the Nobel Prize two years before. Professor Don Metcalf made the landmark discovery of colony stimulating factors (CSFs), which decades later went on to help more than 20 million people worldwide, with CSFs used to treat cancers and other diseases. Professor Jacques Miller, who discovered the function of the thymus, was recruited from London. Professor Ken Shortman began his groundbreaking analysis of T-cell development.

Sir Gustav Nossal took over as WEHI’s director from “Sir Mac” and would lead the Institute for 31 years.

“He was the most generous of scientists. Gus would always include all of us on his papers and really force us to try to put our minds to the problem. When I asked him if I could go to India to work for three months in a hospital with people with leprosy, he said ‘go for it.’

“They were the most amazing people, I was very lucky. Everybody just loved being there, it was just a really exciting time,” Carol said.

Carol married at 27 and went to live on Cobungra Station, in the Victorian High Country, with her husband Donald, who managed the station. “There was a lot to do there, a lot of people to feed. It was a huge change but I enjoyed it.”

WEHI was always “in the background”.

“When Don died seven years ago, I thought ‘how would I like to spend my money – I have more than I need’. I always thought medical research was my great interest,” she said.

“Medical researchers have long-term needs, I thought it was something I’d really like to support.”

Carol has donated to the Metcalf Scholarships but usually trusts WEHI to decide where her donations are most needed.

“Donating gives me great pleasure.”
In 2017, Dr Vanessa Bryant was awarded a five-year grant of $499,530 from the Holmes Trust to undertake research into the most common primary immunodeficiency, Common Variable Immunodeficiency (CVID).

CVID is caused by genetic errors in the immune system that can lead to devastating illness. Patients experience impaired production of protective antibodies leading to frequent severe infections that can reduce life expectancy. Infants with CVID become vulnerable in the first years of life and additionally, have poor responses to vaccination.

With the tremendous opportunity afforded by the Holmes Trust, Dr Bryant set about recruiting clinical partners, genetic counsellors and health economists to improve outcomes for people with CVID by providing genetic diagnoses.

This opened the pathway to curative treatments with the aim of mapping the most cost-effective and efficient diagnostic model so it can be replicated in other treatment centres across Australia.

“I am proud of my team and our contribution to the field over the last five years,” said Dr Bryant, who is a Laboratory Head in the Immunology Division at WEHI.

“Our discoveries mean patients now have a path to targeted care that avoids the serious complications of poorly managed disease.”

This generous funding not only supported Vanessa but two other early career researchers: Dr Charlotte Slade, a clinician scientist, and Dr Lauren Howson.

“This grant has been a gamechanger for our research program, for people’s health, and a momentous boost to our careers,” said Dr Bryant.

There are still great challenges for women in science, which get in the way of their contribution to medical research. Resourcing their research projects and enabling career progression is critical to retaining talent to help meet the health and medical needs of our time. Funding from the Holmes Trust has not only enabled ground-breaking research and improved patient outcomes, but has also provided these early career researchers with the opportunity to reach their potential.

“Supporting the careers of women scientists is about empowering scientific talent to make discoveries that will change and improve people’s lives. The progress Dr Bryant and her team have made in CVID demonstrates the impact that can be achieved by believing in and supporting early career researchers, as well as the power that philanthropy can have in medical research,” said Cecilia Gason from Equity Trustees Philanthropy, manager of The Harold and Pam Holmes Trust.

Dr Bryant said the grant from the Holmes Trust came at a critical time in her career.

“Over the last five years there have been many highlights, but the most important one has been the opportunity to change the clinical course for people with CVID by providing a genetic diagnosis. This result would not have been possible without this funding.

“Our work is not finished yet, but we are now well placed to leverage our discoveries to improve clinical care for children and adults with complex immune diseases.”

The Harold and Pam Holmes Trust is one of more than 600 charitable trusts managed by Equity Trustees.
In 2017, as Anne Petropoulos waited with her husband Con for their 16-year-old daughter to come out of rare genetic disorder surgery, she made a vow. Zoe, who has the genetic disorder neurofibromatosis, had just had a tumour the size of a golf ball removed from her sinus cavity, the second such growth.

“I said ‘this is crazy, we could be doing this for the rest of our lives – we need to get some research done into this condition’,” Anne recalled. “Whenever I’d asked doctors about it, their constant answer was ‘I don’t know – the research hasn’t been done’,” she said.

The vow to support research led Anne and her family to launch Flicker of Hope Foundation in 2018. Since then, the volunteer-run not-for-profit organisation has raised $1.5 million for a variety of research projects into neurofibromatosis.

“The whole idea of the charity is to give people with neurofibromatosis a flicker of hope – you’ve got no hope if there’s no research,” Anne said.

Neurofibromatosis causes tumours to grow on nerve endings throughout the body. Zoe, the face of Flicker of Hope Foundation, has neurofibromatosis type 1 (NF1). An estimated 10,000 Australians have this multisystem disease, identified by brown skin spots and tumours known as neurofibromas that can result in chronic pain, blindness and cancer as well as learning difficulties, epilepsy and autism.

In 2021, WEHI received a grant from the Flicker of Hope Foundation to launch a project into the rarer form of neurofibromatosis, NF2, which is also associated with central nervous system tumours. NF2 is characterised by acoustic neuromas, which are tumours that occur on the nerves for balance and hearing leading to the inner ear, resulting in progressive hearing loss. People may also develop other benign tumours in the brain and spine. Surgery and radiation are the only treatment options, which may not be suitable for some patients and can result in permanent hearing loss and balance problems.

Clinician scientist Dr Jim Whittle has received a grant from the Foundation to develop the first registry of NF2 patients in Australia and is creating a clinical trial to evaluate the use of the repurposed drug Bevacizumab.

“Bevacizumab targets receptors on a protein called VEGF, which is in abundance on acoustic neuromas,” Dr Whittle said. “Blocking it may prevent the growth of new blood vessels that feed tumours, thereby stopping tumour growth,” he said. “Previous small studies show that by using the drug you can potentially shrink tumours and improve hearing outcomes for patients.”

“I’ve seen the real power of developing cancer and rare disease registries at WEHI. This new NF2 registry will bring together researchers and consumers from across Australia, provide a tool to study the biology of the tumours, and facilitate practical and cost-efficient clinical trials to improve outcomes for patients with NF2.”

“Without the Flicker of Hope Foundation funding we wouldn’t be able to establish the registry – it’s a critical kickstart,” he said.

Visit flickerofhope.org.au for more information about the Foundation.
For Margaret Johnson, it was a personal connection and an empathy for people living in developing nations that led her to donate to WEHI. Mrs Johnson was diagnosed with malaria as a 23-year-old high school teacher after returning from a church trip to Vanuatu, where she had been helping build dormitories for a local school.

From that moment on, she felt a strong connection to the plight of people in developing countries and the impacts of diseases on their communities.

“Being diagnosed with malaria gave me a first-hand experience of the condition and an appreciation of the impact it has on people's lives,” she said.

“I also read an article in a UNESCO magazine and learned about the prevalence of malaria and how it could prevent people from sowing their crops for the next season because they didn't have the energy for planting. These two things prompted me to donate to WEHI's malaria research.

Mrs Johnson began donating to the Institute in 1986 after her first husband died. She has been a dedicated supporter ever since.

She said her connection with WEHI had impressed upon her the importance of funding basic science endeavours that could lead to vital discoveries and the development of new treatments.

“Through my faith, I have learnt how interconnected our lives are and that we should be sharing our resources with those who don't have as much as we do.

"I'm just one cog in the wheel contributing to the research WEHI does, but I'm pleased to be able to donate to something that will help make a difference to people's lives."

Mrs Johnson said she hoped the work of the Institute's researchers would one day bring an end to malaria.

“Medical research vastly improves community health. It creates a society where people won't be disadvantaged by these types of illnesses. Many diseases are now preventable because of breakthroughs in medical research,” she said.

“I'd be very excited if we were able to eliminate malaria because it is an endemic issue in many parts of the world. I'd like to see conditions improved for people worldwide.”

Above: Margaret Johnson.

Opposite: Anne Petropoulos (L) and Flicker of Hope Foundation representatives visit with WEHI brain cancer researchers Dr Jim Whittle, Dr Sarah Best and Dr Saskia Freytag.

Next page: Associate Professor Shalin Naik (L) and Esmaeel Azadian.
Shared vision helps Iranian scientist find new lab

As a science student from Iran, Esmaeel Azadian searched worldwide for the right laboratory for his PhD studies, one that would make best use of his skills combining bioinformatics and experimental biology. He identified Associate Professor Shalin Naik’s laboratory at WEHI. “Shalin’s lab was working on some cutting-edge projects which are really advanced – in a world-class institution,” Esmaeel said.

Esmaeel joined the Naik lab in August 2020 as the recipient of a Cybec Foundation PhD Scholarship. “Without it, I wouldn’t have been able to come and join the lab,” he said. “I just want to say thank you to the Cybec Foundation for this great scholarship.

“For example, if we track the growth of breast cancer cells, over time a specific sub-population of cells becomes dominant while others disappear. These cells are likely to be responsible for therapy resistance, metastases and disease progression. Understanding the mechanisms underlying these behaviours is crucial for developing new therapies,” Esmaeel said.

“Until recently we didn’t have good enough techniques to study the dynamic and complex behaviours of different subpopulations within a cell type; Shalin’s lab has some cutting-edge techniques that he and colleagues invented to examine why this occurs.”

Esmaeel wants his science to benefit humanity. “Doing this research here at WEHI means I can join some of the world’s best scientists working hard to understand fundamental mechanisms which could ultimately pave the way for curing complex diseases.”
Thank you

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Here we can see the different types of stem cells in a developing lung, stained in blue and pink. These cells should go on to form the multitude of cell types that form this intricate adult organ.

When Dr Casey Ah-Cann compared healthy and diseased lung tissue, she was able to visualise exactly how lung development can go awry and consider ways to improve stem cell health to ensure healthy lung development.

The 2022 Art of Science exhibition is accessible at wehi.edu.au/artofscience or scan the QR code to explore.