Discovering a Masterswitch to kill cancer

Concern over Japanese encephalitis

Hope for Alzheimer's treatment and a new direction for research
From the Director

I hope you all enjoyed the holiday season with family and friends and I extend my best wishes for a happy and healthy 2023. The New Year heralds an exciting new phase of research at QIMR Berghofer and I’m proud to share with you some of our amazing discoveries including our work on breaking the blood brain barrier in drug delivery for Alzheimer’s and modelling the Japanese encephalitis virus (JEV) in Australia.

Our research would not be possible without you, our loyal friends of QIMR Berghofer. Your generosity during our annual Christmas Appeal goes towards helping researchers like Associate Professor Michelle Wykes, whose immunotherapy research into bowel and breast cancer is showing some incredible results.

At the end of last year, we farewelled two of our great leaders, Professor Lawrie Powell, aged 87, and Professor Don McManus, aged 73. Professor Powell was the Institute’s fifth Director, starting his tenure in 1990. Under his leadership, QIMR Berghofer advanced significantly, with Professor Powell instrumental in the development of the Clive Berghofer Cancer Research Centre. He is remembered for his lifesaving work and mentorship of the next generation of scientists.

Professor McManus brought ‘worms’ to QIMR Berghofer, playing a key role in enhancing the Institute’s tropical disease research program. He helped to shape disease control policy and practice leading to improved treatment across the globe. He was an outstanding researcher, a selfless and caring mentor. He will be sorely missed.

We all know, medical breakthroughs don’t happen with just the work of one person, it takes a community. In the last 77 years, support like yours has been fundamental to our success and from everyone here at QIMR Berghofer I want to say thank you. We look forward to a successful year ahead and sharing our achievements with you.
Contributors

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Is this the MASTERSWITCH to kill CANCER?

Researchers at QIMR Berghofer are possibly on the cusp of a stunning research breakthrough that gives hope to people with the deadly triple negative breast cancer and colorectal cancer.

Associate Professor Michelle Wykes and her team may be on the verge of one of the most exciting breakthroughs in immunotherapy, which shows an 80 per cent success rate in clearing Micro Satellite Stable (MSS) colon cancers and triple negative breast cancer in preclinical laboratory work.

After ten months, the cancer didn’t grow back. In the remaining 20 per cent of cases, the immunotherapy helped slow the cancer’s growth rate significantly.

“We are talking about palpable tumours that completely disappear and melt away in the lab. This treatment may offer long-term, durable protection against these cancers,” said Associate Professor Wykes.

Michelle believes this research could make a significant contribution to controlling MSS cancer, which accounts for about 85 per cent of colon cancers.

“Those who have this type of cancer have very few good treatment options, so this could be the lifesaver they desperately need,” said Associate Professor Wykes.

Associate Professor Wykes believes she may have found the ‘Masterswitch’ that turns on the body’s immune system, so it can identify and kill the cancer.

“This is one of the most exciting breakthroughs we have seen, these two types of cancers are some of the most aggressive and difficult to treat, which is why this research is important,” said Associate Professor Wykes.

The vulnerability in cancer was discovered while Michelle was researching malaria.

“We were trying to find a way to protect people against malaria by improving the immune response, and by investigating this, we found a way to improve the immune response to cancer.

“We think we can make a difference with this treatment. What we need now is funding to get this life-changing research to human clinical trials,” Associate Professor Wykes said.

Preclinical trial success in collaboration with the Royal Brisbane and Women’s Hospital

A collaboration with the Royal Brisbane and Women’s Hospital (RBWH) has been critical to the success of the research.
Associate Professor Melissa Eastgate who is the Deputy Director of Medical Oncology at the RBWH, provided much needed blood samples from metastatic colon cancer patients. It allowed researchers to see the same effect in test tubes as they did in preclinical trials.

The treatment could be a game changer for Associate Professor Eastgate, who often has to deliver difficult news to patients with bowel cancer.

“I have young mums who have this type of cancer, if I could say we have this type of treatment that could potentially help you, that is life changing. That is why this research is so important,” Associate Professor Eastgate said.

“If Associate Professor Wykes can take the research to clinical trials, patients will be treated every three to four weeks, over a three month period, receiving an injection of the antibody,” Associate Professor Eastgate said.

To watch the video about the Masterswitch research – click here.

### Justine Dillon’s courage and positivity is inspirational

At the peak of physical fitness as a pilates and dance instructor, Justine Dillon was struck down with highly aggressive stage four bowel cancer and told she had just 18 months to live.

Existing immunotherapy was ruled out for her cancer and her only chance of survival rested with chemotherapy. But Justine is a fighter and she grasped the challenge to defy the odds and be the miracle survivor, if not for herself, then for her partner and 6 year old son.

Justine is now cancer-free but she knows her long term survival may rely on medical research and that’s why she’s given a blood sample to be tested by Associate Professor Michelle Wykes’ research team.

An immunotherapy Masterswitch to kill cancer may have spared Justine from harsh chemotherapy and that’s why she’s determined to help make it a reality. She hopes that one day very soon, no one with bowel cancer will be told they’re going to die.

Click here to see Justine’s amazing story.

### How can the MASTERSWITCH kill cancer?

1. Usually, our immune system cells called **dendritic cells** protect us by signalling other immune cells like **T-cells** to attack foreign matter in our body. However, cancer cells can cloak themselves and remain hidden, so our immune system cannot detect them.

2. Associate Professor Michelle Wykes and her team have discovered that certain antibodies can turn on the **Masterswitch** on the dendritic cells, allowing them to uncloak and recognise the cancer cells. The dendritic cells and antibodies then activate the **T-cells** to attack and kill cancer cells.
Summer is the season of rain and mosquitoes in Australia, but this year there is particular concern, with QIMR Berghofer researchers warning of a major outbreak of the little known mosquito borne - Japanese encephalitis virus (JEV).

Modelling by QIMR Berghofer’s Associate Professor Greg Devine, head of the Mosquito Control Laboratory, shows as many as 750,000 people could be at risk of exposure to the virus.

Only last year, JEV was confined to Asia and far northern Australia, with researchers worried JEV could now be endemic.

While most exposed people will be asymptomatic around one in 250 will develop symptoms, and of those, it will be fatal for 30 per cent.

“Symptoms range from a fever through to severe encephalitis or inflammation of the brain. There is no specific treatment for JEV, so we can only manage symptoms and provide supportive management,” said Associate Professor Devine.

Two vaccines are registered in Australia, but at the moment, there isn’t enough stock to treat those who need it.

Researchers are now investigating a possible solution to the JEV vaccine shortage. A collaboration between QIMR Berghofer, UQ and Dr Deb The Travel Doctor are researching whether reducing the dose is still as effective. In the meantime, Australians are being encouraged to take precautions.

“Most Australians have not been exposed to the virus before so they have no immunity. The best protection is vaccination, but that’s not available to everyone at the moment. The next best protective measure is to avoid being bitten by a mosquito,” Associate Professor Devine said.

JEV is maintained in wild birds, and is spread by mosquitoes to other animals including pigs, humans and horses. Last year, the virus dramatically expanded its range with confirmed cases in over 80 piggeries throughout southern Australia.

Researchers are pointing to the extended La Nina weather event as a cause for the rapid expansion across Australia, with new wetlands attracting infected birds and mosquitoes.

Feral pigs could also be playing a role in transmission, testing positive to the virus in the Northern Territory and Queensland.

People living within a four kilometre radius of piggeries or close to populations of wading birds could be at risk, according to Associate Professor Devine’s research paper, which has been published in Oxford Academic’s Clinical Infectious Diseases.

Co-author and infectious diseases epidemiologist from The University of Queensland School of Public Health Professor Colleen Lau said, “The vaccines are highly effective and safe, but supplies are limited, so health authorities are prioritising vaccination for high risk groups.”
Check eligibility for vaccination

Protect yourself at dawn and dusk

Apply insect repellants with Picaridin/DEET

Wear long, loose clothing

Install insect screens

Protect babies by using mosquito proof netting on prams

Use sprays and coils in outdoor areas

Empty standing water from containers and elsewhere

Pacific alliance to combat mosquito-borne diseases

PacMOSSI, a strategic alliance of Pacific Island nations and international institutions, is hoping to tackle the increasing spread of dangerous mosquito-borne diseases.

QIMR Berghofer hosted the first Pacific Mosquito Surveillance for Impact (PacMOSSI) workshop at the Institute’s Mosquito Control Laboratory. It is one of the few facilities in the Southern Hemisphere with quarantine authority to house various exotic, insecticide-resistant mosquitoes that transmit viruses such as dengue fever, Zika, chikungunya, and malaria.

Associate Professor Devine said the workshops were an important opportunity to collaborate and share expertise with Australia’s Pacific Island neighbours.

Watch the video about this research – click the link here

Associate Professor Devine says JEV also has a devastating impact on animals, causing abortions and still births in pigs and severe neurological effects in horses.

All researchers believe that JEV is here to stay with climate change and more extreme weather events.

(From left to right): Osiro Lorin (Palau) L and Siaola Mahe (Tonga) and Oni Lewakulati (Fiji) on a PacMOSSI field trip
In a major advance for the treatment of Alzheimer’s disease, QIMR Berghofer scientists and collaborators have overcome a significant obstacle by successfully delivering drugs through patient cell models of the human blood-brain barrier.

The blood-brain barrier is a protective wall of cells designed to prevent pathogens and toxins from entering the brain via the blood, but it also blocks 98 per cent of disease-fighting drugs.

By applying focused ultrasound and microbubble technology, the team demonstrated how two promising drugs may be delivered through the barrier and into the brain safely and effectively.

The Queensland Brain Institute (QBI) has successfully used the ultrasound technology to deliver drugs in several models. Now, the QIMR Berghofer team’s success in penetrating drugs through patient-derived human cell models is an advance that could transform the treatment of Alzheimer’s disease and other brain disorders.

QIMR Berghofer stem cell researcher Dr Lotta Oikari said the cell models reflect key characteristics and variations of Alzheimer’s, creating a disease-specific screening platform which promises a future of tailored treatments for people.

“We found the delivery of specific drugs was significantly increased in the blood-brain barrier models using the ultrasound-microbubbles method. We also showed the treatment was safe with no damage to the cell models. The results were robust and reproducible, which is really exciting,” said Dr Oikari.

QIMR Berghofer PhD candidate Joanna Wasielewska, who co-authored the research article, said the screening platform could offer a personalised medicine approach in the future.

“In a decade, we could eventually be at a stage where we take cells from patients, perform drug screening and then two weeks later we know which drug to give to patients. That is the goal with this work.”

It took researchers three years to develop the platform manually. They are now investigating how to automate the process to make it up to 10 times faster.

“We could then test many more drugs using cells from more patients in a much shorter time. This could significantly accelerate Alzheimer’s disease drug discovery,” said Ms Wasielewska.
Co-author and the head of QIMR Berghofer’s Cellular & Molecular Neurodegeneration Laboratory Associate Professor Anthony White said there is no cure for Alzheimer’s disease, so finding a way to improve treatment will make a huge difference to the lives of thousands of people.

“The cell-based screening platform we’ve created can also be adapted for other brain diseases to find new drugs and test for specific effects on patients. We are already developing models for motor neurone disease and childhood dementia,” said Associate Professor White.

The researchers collaborated with a number of partners on the research including leading therapeutic ultrasound expert Professor Jürgen Götz who is the Director of the QBI’s Clem Jones Centre for Ageing Dementia Research (CJCADR), as well as The University of Queensland, The University of Melbourne, and The Florey Institute of Neuroscience and Mental Health.

Watch the video about this research – click this link here.

Promising new direction for Alzheimer’s research

A large-scale genetic data study at QIMR Berghofer has uncovered more about modifiable lifestyle factors that play a role in both causing and protecting against Alzheimer’s disease.

Following recently published international research identifying lifestyle risk factors associated with Alzheimer’s, QIMR Berghofer researchers used genetic data to zero in on specific factors.

Lead researchers Associate Professor Michelle Lupton and Professor Eske Derks and their team focused on educational attainment, intelligence, and household income, which had previously been shown to be causally associated with Alzheimer’s.

Using genetic data, the team found that the protective effects of educational attainment and household income were due to intelligence.

“Our findings suggest increasing years of education won’t directly lead to a reduction in Alzheimer’s disease incidence. This leads to the next question of whether intelligence is in fact modifiable and could be targeted as a means to prevent Alzheimer’s disease.

“From the many potentially modifiable lifestyle factors for Alzheimer’s disease that were tested using genetic data, we have shown that only intelligence is an independent causal risk factor. Therefore increased intelligence is directly protective. While intelligence may not be easily modifiable, this research has shown an exciting new direction for how we may begin to better understand this disease,” Associate Professor Lupton said.

Dr Michelle Lupton

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An international study has found promising early evidence that a compound identified in the venom of an Australian octopus may significantly slow cancer growth and help fight drug resistance in patients with one of the most serious forms of melanoma.

The findings suggest that the octopus compound or peptide, could potentially provide the foundation for a highly-targeted, less toxic treatment against BRAF-mutated melanoma, which accounts for about half of all melanoma cases.

The pre-clinical study was led by Dr Maria Ikonomopoulou, who started the project while at QIMR Berghofer, with collaborators from The University of Queensland, James Cook University, the University of Sydney, University of Santiago de Compostela and the Madrid Institute for Advanced Studies in Food.

“We looked at venom compounds derived from various marine animals, but it was specifically the peptide from the Australian southern sand octopus that stood out for its ability to safely and effectively target BRAF-mutated melanoma cells in preclinical models,” Dr Ikonomopoulou said.

“We were very surprised to discover the octopus venom peptide selectively reduced the proliferation of melanoma cells and prevented tumour progression, while having little effect on healthy cells. This specificity is really important as existing treatments can be quite toxic on healthy cells and have nasty side effects, limiting the quantities that patients are able to take.

“It’s still very early days. But these findings offer hope that this octopus peptide may be developed into a cancer-targeted treatment that can safely and effectively be administered even in very high doses,” Dr Ikonomopoulou said.

Around 50 per cent of all melanomas harbor a BRAF mutation, which is associated with cancer metastasis and poor prognosis.

Dr Ikonomopoulou said that while BRAF inhibitors and other targeted therapies have delivered unprecedented outcomes for some patients, they’re not suitable for everyone and there’s an urgent need for more options.

The researchers also want to investigate whether the compound has potential against other BRAF-mutated cancers, including those of the prostate, colon and non-small cell lung.
Accelerating research into haemochromatosis

QIMR Berghofer is a leading member of a consortium that is establishing a new national patient register for people with haemochromatosis. The aim is to accelerate research and improve patient outcomes.

Haemochromatosis is a genetic disorder in which people absorb too much iron from their diet, and this can cause organ or tissue damage. It can be serious if left untreated or undiagnosed.

Deputy Director of QIMR Berghofer, Professor Grant Ramm says the Haemochromatosis National Patient Registry (HNPR) will be an important national and global resource for clinicians.

“This new national register will enable larger studies, more basic and clinical research projects, and the recruitment of patients to trial potential new therapeutic approaches or treatments all across Australia – delivering enormous benefits to researchers, patients and their doctors,” Professor Ramm said.

Around one in 200 Australians are at high risk of having haemochromatosis, making it the most common genetic disorder in Australia.

“Haemochromatosis can present with various chronic conditions including liver disease, arthritis and fatigue. Some of the early symptoms such as sore joints and fatigue can commonly be thought of as iron deficiency rather than iron overload. So there is a need for greater community awareness to enable early diagnosis and treatment,” Professor Ramm said.

Haemochromatosis can be treated by regular blood donation, highlighting the importance of early detection and lifelong monitoring to minimise the risk of serious disease.

Funded by the Department of Health’s Chronic Disease Prevention Program, the centralised system will build on the database of 4,000 patients, currently hosted by QIMR Berghofer.

“QIMR Berghofer has long recognised the importance of such a repository for patient information and for decades we’ve hosted a clinical database with data from thousands of Queensland hemochromatosis patients, providing a wealth of information for vital medical research,” Professor Ramm said.

The project is a collaboration between Haemochromatosis Australia, QIMR Berghofer and Edith Cowan University and supported by Australian Red Cross Lifeblood.

“We’re very proud that we are able to assist in this collaborative endeavour and to contribute extensive information from our own database at QIMR Berghofer, helping to fuel important and much-needed research right across Australia,” Professor Ramm said.
Huge opportunity to convert genetic discoveries into mental health breakthroughs

IMR Berghofer scientists believe a new era of precision psychiatry is not far away, and have identified a list of challenges that need to be addressed to make it a reality.

Scientists have discovered thousands of genes linked to mental health conditions, including anxiety, depression, anorexia nervosa, schizophrenia, bipolar disorder, autism spectrum disorder, and ADHD. This has been made possible through new genetic data sets of DNA donated by millions of people and advancements in supercomputers.

The head of QIMR Berghofer’s Translational Neurogenomics Laboratory, Professor Eske Derks, said it is time to progress this research to the next stage.

She has co-led a new study, published in *Nature Genetics*, identifying 10 key challenges that need to be overcome before these genetic discoveries will lead to improved patient care.

“The challenges we’ve identified are not simple to solve but with a creative, collaborative, and co-ordinated research approach, and investment that supports scientists to do this work, we could make a new era of precision psychiatry a reality,” Professor Derks said.

Dr Zachary Gerring, who co-led the study, said there is a tremendous opportunity to use genetic data to find more effective treatments.

“For decades, there has been little progress in developing new drugs for mental health conditions. It can be a long process of trial and error for patients to find a treatment.

“We can integrate the genetic data with drug databases to identify potential new drug candidates that can be repurposed to treat mental health conditions. Repurposing approved drugs means we could get them to patients more quickly and cheaply than developing a completely new drug,” Dr Gerring said.

QIMR Berghofer PhD candidate and co-lead author, Jackson Thorp, said there is huge potential to use genetic discoveries to work out the biological mechanisms of mental illnesses.

“By better understanding the biological processes, we could find the causes of mental health diseases which could lead to identification of high risk groups of people, more tailored interventions, and more accurate tools for diagnosis,” Mr Thorp said.

“We’ve had an era of genetic discovery and now we’re on the threshold of a new era of precision psychiatry which could offer more effective drugs for patients, and could help clinicians to better diagnose and treat these complex conditions,” Professor Derks said.

Watch the video about this research – click here
A national-first study by QIMR Berghofer researchers has mapped the prevalence of youth self-harm across the country, identifying states and regions that need to be prioritised for suicide prevention funding and support.

The study, The Australian Youth Self-Harm Atlas, led by QIMR Berghofer researcher Dr Emily Hielscher, shows that a highly localised approach is needed to tackle youth suicide.

“Suicide is still the leading cause of death in Australian young people, but the research shows that each community is affected differently. We saw an urgent need to investigate regional variability in the prevalence and experience of youth self-harm and suicidality across the nation,” Dr Hielscher said.

The study identified significant self-harm clusters in each state and territory including regional parts of Western Australia, Northern Territory, and North and Central Queensland, as well as eastern Melbourne, outer south-eastern Adelaide, and outer Western Sydney.

“The prevalence of youth self-harm and suicidality was generally higher in regional and remote areas, with Aboriginal and Torres Strait Islander communities disproportionately affected,” Dr Hielscher said.

Key self-harm risk factors included youth mental illness, parental unemployment, and insecure housing, where the significance of some factors varied between metropolitan and regional parts of Australia. This included the effects of COVID-19 and climate change.

“Ultimately, we can’t adopt a blanket, one-size-fits-all approach if we’re to reduce youth self-harm and suicide in Australia. This research shows that different regions have varying risk factors, challenges, and needs – and the support we’re offering young people must address that,” Dr Hielscher said.

Key recommendations from the study include:

• Increased availability of real-time localised data in identified self-harm clusters
• Improving youth mental health, e-safety, and single parent employment
• Addressing unique service barriers in metropolitan and regional areas via the local Primary Health Networks.

The research team hopes these recommendations are considered as part of proposed youth suicide prevention planning across Australia. Currently, Tasmania is the only state or territory to have developed a dedicated youth suicide prevention plan.

This study was funded by the National Suicide Prevention Research Fund, managed by Suicide Prevention Australia.

Watch the video about this research – click here
Supporting future leaders of health and medical research

Researchers Kylah Bradbrook and Tom Crawshaw are dedicating their PhD research projects to finding answers about brain cancer, thanks to support from a generous QIMR Berghofer donor. Named scholarships and gifts help students like Kylah and Tom pursue a full-time PhD project and focus 100 per cent on their studies.

Donors can choose to support a PhD student outright over three years, or opt to make an ongoing “top up” to a scholarship such as the named award donated by Bob and Jenny Wells recently.

The Peter Wells Memorial PhD Scholarship Award

The Peter Wells Memorial PhD Scholarship Award is donated by Bob and Jenny Wells in memory of Bob’s twin brother, Peter who died of Glioblastoma Multiforme (GBM), a highly aggressive form of brain cancer.

Brain cancer is hard to treat with five year survival of only 20 per cent. More research is vital to improve patient survival, yet funding for this insidious cancer remains low. Attracting talented early career researchers into this field of research is vital.

Bob and Jenny were inspired by the work of Professor Bryan Day when they visited his lab at QIMR Berghofer in 2017 when Peter was first diagnosed. That visit led them to make a gift in their Will for brain cancer research.

Bob and Peter, like many twins were very close. After Peter died, Bob was motivated to do more to accelerate brain cancer research, which potentially one day will save lives. Reading in Lifelab about another donor’s experience of supporting PhD students, Bob and Jenny decided they too would like to support a PhD student in Peter’s honour for brain cancer research.

The Peter Wells Memorial PhD Scholarship “top up” is now awarded each year to a talented PhD candidate in the Brain Cancer Research Laboratory. The award provides a gift of $10,000, which is in addition to a University provided scholarship.

Bob who is a retired high school science teacher said, “The passion and outstanding talent of the PhD candidates reminds me of the very best students I taught.

“Knowing that my brother Peter’s memory is living on through their potentially life-saving brain cancer research is really meaningful and Jenny and I enjoy seeing their progress,” Bob said.

Bob Wells - The Award in Peter’s honour supports a PhD student researching brain cancer.
Researchers dedicated to finding answers about brain cancer

Kylah Bradbrook was gifted the inaugural award in 2022, and Tom Crawshaw will take up his award from 2023.

“It was an honour to receive the scholarship through Bob and Jenny’s generosity. As a recipient, it meant so much to be able to honour Peter’s legacy through my work. I hope that one day, I will be able to help people like Peter to overcome this disease.

“Having the Scholarship this year has given me more financial freedom. With less financial stress, I have been able to focus more of my time and energy into my project,” Kylah said.

Tom Crawshaw is a second year PhD candidate and a clinician scientist. He practiced as a junior doctor before commencing his PhD.

“I am truly grateful to receive the Peter Wells Memorial scholarship. This will allow me to focus on my ambition to develop a better treatment for victims of brain cancer. Having just become a father, it’s a great comfort to know that I will be able to complete my PhD studies while assuring a decent standard of living for my family,” Tom said.

To find out how you can support a talented researcher, phone 1800 993 000 or email supportus@qimrberghofer.edu.au
Tell us about what you do at QIMR Berghofer

I am a statistical geneticist in the QIMR Statistical Genetics laboratory. It is both challenging and intellectually rewarding, with genetic discoveries changing the way we solve some complicated medical problems. I work on gene-mapping studies, genetic prediction and genetic causal inference analyses on various complex diseases, with a strong focus on cancers.

What is one of the most exciting projects you are working on right now?

Genetic discoveries are transforming medical research. I am currently leading a project that studies how genetic prediction of disease risk works among individuals of diverse/mixed ancestries. This is an important milestone in genetic prediction analyses, as there is a very limited amount of existing data out there to characterise disease risk among these individuals.

What could be achieved in your field of research with additional funding support?

Medical research is a field of work that is ever evolving. With additional funding, my research will be able to investigate how genetic data from diverse populations can help understand which risk factors on cancers are population-specific and which are shared across various ethnicities.

My research can also expand sample recruitment for clinically complicated reflux patients, to understand how genetic information can be used to predict the manifestation of specific gut symptoms, in the context of potentially screening individuals that are likely to develop malignant esophageal cancers.

What is one of your ‘big predictions’ for your field in the next 10 years?

The development of large biobanks will become a crucial resource in medical research and be positively appraised by government authorities worldwide to enable earlier screening of individuals that are genetically predisposed with higher risk of developing preventable diseases. Genetic research will further progress our understanding of disease causes in genealogically diverse populations.

The growing field of Statistical Genetics

Statistical Genetics examines people’s genetic information to see if there are patterns that emerge that can be used to determine the risk of disease and other health issues.

In today’s global environment, the field of Statistical Genetics has grown, with the potential for many datasets to be shared worldwide. The sheer scope of information collected and examined is invaluable for studies in a range of disorders and diseases, from cancers to ADHD.
QIMR Berghofer
Clinical Trials

Millions of people are healthy today because of the role of clinical trials in developing life-saving new drugs and treatments.

Infection & Inflammation
- Phase 1 volunteer infection study of Ruxolitinib to boost immunity to malaria parasites
- Phase 1 volunteer infection study of tafenoquine to clear malaria parasites from the blood
- Phase 1 trial of T-cell therapy for viral infections in transplant recipients
- Phase 1 trial of T-cell therapy to prevent viral disease in children post-transplant
- Phase 1 trial of T-cell therapy for COVID-19
- Phase 1 volunteer infection study to investigate the transmission of malaria parasites to mosquitoes

Mental Health & Neuroscience
- PARTING: Psilocybin-Assisted suppoRtive psychoTherapy IN the treatment of complicated Grief feasibility trial
- Cadence Discovery: A Trial of a food additive for the treatment of schizophrenia
- Pilot RCT of a cognitive behavioural family intervention for reducing bullying victimisation and mental illness of adolescents
- Restoring the function of brain networks in Obsessive-Compulsive Disorders using non-invasive brain stimulation
- Prospective Imaging Study of Ageing (PISA)

Cancer Research
- PROMISE: Patient Reported Outcome Measures in cancer care: a hybrid effectiveness-Implementation trial to optimise Symptom control and health service Experience
- PROCESS: Pancreatic cancer Relatives Counselling and Education Support Service trial. Assessing the effect of nurse-led counselling, compared with information alone, on participant-reported outcomes and use of medical services

Population Health
- The Sun-D Trial: the effect of high SPF sunscreen application on vitamin D
- THYroid Replacement Options for Primary Hypothyroidism: - A Pilot Study
- D-Health: high-dose vitamin D supplementation for prevention of mortality and cancer in Australian adults aged 60-79

If you’re interested in participating in any of the trials, please visit https://www.qimrberghofer.edu.au/our-research/participate/
Congratulations to the following QIMR Berghofer scientists who received Institute Awards for their outstanding contributions to medical research in 2022.

Celebrating Research Success

Professor Lawrie Powell AC, who helped grow and progress QIMR Berghofer during his decade-long tenure as Director, passed away peacefully in September, aged 87.

The internationally recognised medical researcher was appointed the Institute’s fifth Director in 1990 after an esteemed career in iron storage disorders, particularly the inherited disease haemochromatosis. Under his leadership, QIMR Berghofer advanced significantly, with Professor Powell instrumental in the development of the Clive Berghofer Cancer Research Centre.

Professor Powell was recognised nationally and internationally for his contributions to medicine and received substantial accolades, awards and honours, including the Companion of the Order of Australia (AC); Queensland Great (2002), elected President of the International Association for the Study of Liver and Honorary Fellow of the Royal College of Physicians in London. He was the only Australian researcher awarded the Distinguished Achievement Award from the American Association for the Study of Liver Diseases.

He remained warmly engaged with QIMR Berghofer and the scientific community in his later years.

**Vale Professor Lawrie Powell**

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**Celebrating Research Success**

Congratulations to the following QIMR Berghofer scientists who received Institute Awards for their outstanding contributions to medical research in 2022.

- **Bancroft Medal**
  - Scott Wood, Senior Bioinformatician, Genome Informatics Group, and Macky Edmundson, Scientific Equipment Manager, Scientific Services

- **Ralph Doherty Prize for Outstanding Achievement and Leadership in Medical Research**
  - Professor Rachel Neale, Group Leader in the Cancer Aetiology & Prevention Group

- **Lawrie Powell Clinical Translation Award**
  - Dr Siok Tey, Group Leader in the Translational Cancer Immunotherapy Group

- **Adele Green Emerging Leader Award**
  - Dr Bridget Barber, Team Head in the Clinical Malaria Group

- **ACRF Prize for Cancer Research Excellence**
  - Dr Felicity Newell from the Medical Genomics Group, and Dr Peter Johansson from the Oncogenomics Group

- **QIMR Berghofer Postdoctoral Prize**
  - Dr Olga Kondrashova from the Medical Genomics Group, and Dr Zachary Gerring from the Translational Neurogenomics Group

- **Breakthrough Award**
  - Professor James Hudson and team

- **Fellows of the Institute**
  - Professor Alan Pettigrew
Bancroft Society thank you event

QIMR Berghofer welcomed Bancroft Society members to the Institute in October to hear the latest in medical research news and to enjoy a high tea. Thank you to the extraordinary and big-hearted members of our Bancroft Society who have included a gift in their Will to QIMR Berghofer.

For more information on how you can change the future of health by supporting medical research in your Will, contact our Gifts in Wills team for a friendly and confidential chat on 1800 993 000 or email giftsinwills@qimrberghofer.edu.au

2022 and 2023 World Science Festival

QIMR Berghofer was well represented at the 2022 World Science Festival with appearances by scientists from across the Institute.

Presentations were held in Ipswich and Toowoomba. We’re looking forward to World Science Festival Brisbane and Queensland in 2023!

At left, Dr Nigel Waterhouse inspiring young scientists at World Science Festival, Toowoomba
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