A message from our Chair

On behalf of the Board of the Florey Institute of Neuroscience and Mental Health, I am delighted to welcome you to the Florey’s 2021 Annual Report.

In what was another extraordinary year bringing new changes and challenges due to the COVID-19 pandemic, I am extremely proud in how the Institute has weathered the storm by banding together and remaining focussed towards our collective mission.

Thanks to the unwavering support and commitment of our staff and students, leadership team, Board and a multitude of partners, including the Victorian and Australian Governments, the University of Melbourne, Austin Health and Melbourne Health, the Florey has continued its important research in solving the greatest brain and mind challenges of our era, and which you will read about in this report. Also integral to the Florey’s ongoing success are our generous donors and philanthropic partners, trusts and foundations, whose valued support remained constant throughout the year. To all, I say thank you.

Looking ahead, our next phase as an Institute is filled with much opportunity and optimism. I am pleased to report that a Future Florey Committee of the Board has been established and a strategic review of the Institute is well underway that focusses on achieving growth and excellence for years to come. I am delighted that you are able to join us on this exciting journey into the Florey’s next phases of success.

With that said, it is my pleasure to acknowledge the appointment of Professor Trevor Kilpatrick as the interim Director at the Florey. Professor Kilpatrick has a decorated record of excellence in research and leadership. Most recently, he expertly served as the Florey’s Clinical Director. Professor Kilpatrick’s research interests lie in the neurobiology of multiple sclerosis, translation of discoveries in multiple sclerosis to clinical trials and commercial engagement.

Along with my warm welcome to Professor Kilpatrick, I extend my gratitude on behalf of the Board and Institute to Professor Steve Petrou for his leadership over the past three and a half years. In addition to navigating the Florey through COVID-19, he leaves a legacy of a focus on commercialisation to build financial resilience, and workplace and wellbeing initiatives for staff and students.

Lastly, for those living with a brain or mental health condition studied at the Florey, which is 1 in 5 Australians, you should know that every day we are working resolutely for you and your families.

Again, thank you for your ongoing support of the Florey.

Mr Mark Jones AM
Chair,
The Florey Institute of Neuroscience and Mental Health
A message from our Director

Extraordinary people achieving extraordinary outcomes for people through investigation of brain and mind science. This is how I reflect on our work at the Florey Institute of Neuroscience and Mental Health.

The Florey is a research institute with many important facets. In concert, we are a global force in fundamental neuroscience and translational research, with a focus that extends to cutting edge clinical and field studies of high impact. We are also collectively relentless in our vision to improve the lives of people who have either a disease or disorder of the brain and mind. As I reflect upon that vision, I am very much aware of the privilege and responsibility that being part of the Florey engenders, especially in my role as its recently appointed interim Director.

This Annual Report highlights some of our important successes in 2021. You will read about ground-breaking discoveries. Although this second year of the COVID pandemic brought ongoing challenges to our work and, indeed, to many of our lives, I believe the long-term impact of our discoveries will be even more enduring.

You will also read about the many novel therapies, approaches and clinical trials pursued by our clinical researchers who are bringing new treatment options and hope to patients and their families, options that had their genesis in fundamental ground-breaking, discovery-oriented research.

These stories are a taste of the truly avant-garde research being undertaken at the Florey across more than 20 brain and mental health conditions, including Alzheimer’s disease and other dementias, epilepsy, Parkinson’s, stroke, addiction, depression, multiple sclerosis, and many more.

Driving this impactful research are 600 exceptionally talented scientists and support staff, a dedicated Board and Executive team, generous donors and countless partners. I want to thank and acknowledge each of you as we continue to work together for a common goal.

To comprehend what meaningful and lasting outcomes can be achieved when collegiate, bright minds join in collaboration – look no further than what is being achieved at the Florey. Whether you are a long-time supporter of the Institute, or have recently joined our Florey community, thank you for being part of our important journey as we continue to transform lives through our important brain and mental health research.

Professor Trevor Kilpatrick MBBS PhD FRACP FAHMS
Director,
The Florey Institute of Neuroscience and Mental Health

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Our cover photo
Research Assistants provide fundamental technical support to our many research teams at the Florey. Brianna Xuereb is a Research Assistant in our Neuroregeneration Theme – a team advancing world-class brain repair research. Read about some of the exciting stem cell work happening in this Theme on pg 19.
We enable ingenuity and visionary thinking to reveal the inner workings of the brain. The Florey brings together multidisciplinary teams from different fields of neuroscience and mental health research to contribute to the global scientific understanding and treatment of diseases and disorders of the brain and mind. Our research endeavours and outcomes in clinical neuroscience have meaningful impact on people's lives and their families. We are a trusted source of information within the scientific and broader community and renowned for our expertise and innovative approaches in brain research. We are a leading force of great minds with a shared goal - to improve health and wellbeing outcomes through our work.
Annual Report 2021

An innovator in brain research

The Florey Institute is home to the best and brightest minds in neuroscience and mental health research across all stages of life and brain development. In 2021, we adopted a new scientific structure reflecting our breadth of brain research and knowledge spanning early, mid and late stages of our life.

The Ageing Brain

The ageing brain is vulnerable to several serious diseases. As we age, the human brain undergoes changes to its structure, chemistry, function and cognition. While in the past these changes may have been considered an inevitable part of getting older, we believe that it is possible to live throughout old age with a healthy brain. Old age should not necessarily mean the loss of brain function.

The Florey’s Ageing Brain Division investigates what we can learn about the brain, and the conditions that can impact it, during the ageing process. An array of research approaches are used from basic studies of ageing worms to molecular biology, human imaging and clinical trials. Sophisticated technologies are employed, including gene editing (CRISPR), transgenic mice and mass spectrometry.

Led by Division Head Professor Ashley Bush, this large collection of diverse researchers specialises in generating fundamental knowledge about the ageing process, as well as diagnosis, prevention and treatment of conditions associated with ageing.

Areas of expertise in this division include stroke, neurodegenerative diseases including Alzheimer’s disease, Parkinson’s disease and other dementias and movement disorders. These disorders represent a major societal burden with our ageing population.

“Ageing is the number one risk factor for major brain diseases such as Alzheimer’s, Parkinson’s, stroke and motor neuron disease. Life expectancy is now longer than at any time in mankind’s history and brain disorders of advanced age represent major treatment challenges. Our division aims to understand the biochemical and clinical processes of ageing that will advance new treatments and improve preventative strategies.”

Professor Ashley Bush, Head of the Ageing Brain Division.

The Developing Brain

The Developing Brain Division encompasses not only research on brain development in early life but also laboratory and clinical work on brain regeneration, particularly if the brain has been damaged by disease or external agents, such as toxins or trauma.

This research division has a large focus on understanding the causes of a wide range of neurological and psychiatric disorders, to inform new strategies for prevention and treatment. We are particularly focused on brain and mind disorders which can commence in very early human life - even in utero or conception.

We use a wide range of research processes, ranging from laboratory studies of stem cell transplants or brain epigenetics (how genes are switched on and off by environmental influence), the role of neuronal networks in health and disease, clinical trials and human cohort studies. We are developing new personalised medicine approaches such as advanced neuroimaging and clinical support tools for epilepsy.

Brain experts across all stages of life.
Led by Division Head Professor Anne-Louise Ponsonby, research teams are advancing knowledge and contributing to new treatments and preventative strategies.

“Optimal development of the human brain is a very important area. Our work encompasses a range of diseases, from investigating cause to repairing damage. We are also working on how healthy brain development occurs, such as how memories are formed, because improving our knowledge of these processes allows us to better understand what is required for optimal brain health.”
Professor Anne-Louise Ponsonby, Head of the Developing Brain Division.

The Productive Brain

The brain contains more than 100 billion nerves which communicate in trillions of connections. Maintaining the health of this complex organ is critical to every aspect of our lives.

The Florey’s Productive Brain Division investigates how the brain integrates complex information to enable appropriate regulation of conscious and unconscious processes. We also interrogate how this impacts our mental and physical wellbeing and use this information to develop ways to diagnose and treat conditions that affect the brain and mind, plus their downstream consequences.

Led by Division Head Professor Andrew Lawrence, research teams are investigating how the brain interacts with every system of the body and undertaking work to prevent, diagnose and treat mental health conditions including addiction, schizophrenia, bipolar disorder, depression, autism and cognitive dysfunction.

Systems neuroscience teams generate fundamental knowledge about how the brain regulates key physiological processes and translate these findings into new treatments and therapeutics for complex conditions. We also have teams dedicated to target-based drug discovery programs whose aim is to develop novel neurotherapeutics to improve quality of life.

“Maintaining brain health is critical for our emotional and physical well-being and allows us to make a positive contribution to society. Our goal is to characterise brain function in health and disease and thereby identify mechanism-guided novel therapeutic targets that can be empirically tested in robust models and ultimately human subjects.”
Professor Andrew Lawrence, Head of the Productive Brain Division.

(L-R) Florey research Division Heads Professors Ashley Bush, Anne-Louise Ponsonby and Andrew Lawrence.
Around 3,000 people in Australia currently live with the rare parkinsonian condition called Multiple Systems Atrophy (MSA), which affects movement, breathing, blood pressure and other body functions.

Professor David Finkelstein has been working closely with people living with MSA and their families for over 10 years to understand the biological mechanisms underlying the condition.

“I want my research and the work we are continuing to do in MSA to provide hope for people living with Multiple System Atrophy,” said Prof Finkelstein.

“We are constantly making progress in learning more about this rare disorder and are working hard to develop disease modifying treatments,” he added.

Prof Finkelstein believes that a recent study from his team can help open new pathways to investigate and advance treatment options where there are none currently available.

The research demonstrates that elevated brain iron levels in MSA animal models are related to the pathology of the disease.

In this work, Prof Finkelstein and his team were able to successfully target and reduce brain iron levels using a known iron-lowering compound, which slowed neurodegeneration, reduced abnormal pathology and prevented MSA symptoms from progressing.

“Scientists have often queried the role of iron in disease progression. The question of whether a reduction in iron levels could help improve disease symptoms in people has remained unanswered,” said Prof Finkelstein.

“Our results give us assurance that we’re on the right track to answer these questions, laying the foundations to improve the lives of people who experience this challenging disease and accelerating trials of new treatments. It is a message of hope for those living with MSA.”

Community responds

When news of this research was circulated on social media, messages of hope and support were received from members of the global MSA community. Here, we showcase just a few of these:

Wow amazing!!! Our Mum has MSA and we live with hope 🙏🌈. Thank you for your ongoing and outstanding work @jokjohnston 📝

This is really great news. Keep going 🙏
Chahat Gondhi 🌟

Thanks for the info! Good luck with this research, let’s hope 🙏🙏
Anita Lynch 🌟

So grateful that research is being done.
Jocelyn Buswell Lewis 🌟
Making sense of touch and sound.

Associate Professor Lucy Palmer and Dr Luca Godenzini are among the masterminds behind a study uncovering how our brain processes information from various senses. The research has major implications for neuroscience moving forward.

"By utilising advanced neuroscience techniques, we created a ‘window into the brain’ to view neural activity with cellular resolution. This allowed us to uncover evidence of the brain’s ability to combine and harness information from multiple senses at once.” – Dr Godenzini

"The interactions we have with the world are rarely through a single sense and our ability to combine different sensory signals is extremely useful. What we discovered challenges the current understanding of how our brains process sensory information, which has major implications for neuroscience.” – A/Prof Palmer

"Our research demonstrates that sound can enhance processing of the sense of touch. We found that when sound and vibration were presented together in an animal model, neurons in the part of the brain that process touch increased in activity compared to when vibration and sound occurred alone. Communication between different sensory areas of the brain was crucial for this to occur.” – Dr Godenzini

"We illustrated that ‘antennas’ on the neurons that are called dendrites can integrate both auditory and tactile information. These senses of sound and touch when working in tandem lead to faster decisions than a single sense working alone.” – A/Prof Palmer

"These novel study findings challenge the accepted scientific theory that the brain only processes sensory information separately in one region of the brain, before combining it in another. It means that in processing sensory information, our brains may work like an orchestra harmonising different signals.” – Dr Godenzini

"As well as contributing new, untapped insight to the field of neuroscience, our research can help improve understanding of conditions where sensory processing is impaired, such as schizophrenia, anxiety and autism, and enable researchers to develop better treatments.” – A/Prof Palmer
Serendipitous discovery charts new course for therapies.

For the first time in 60 years, scientists have uncovered the actions of a new metal in controlling blood vessels in the body that regulate blood pressure and blood flow. The serendipitous discovery made at the Florey opens new doors for the development of zinc-based therapies to treat cardiovascular and cerebrovascular diseases, which includes hypertension and stroke.

Associate Professor Scott Ayton and Dr Ashenafi Betrie were investigating the effects of zinc-based therapies on brain function in Alzheimer’s disease mouse models alongside collaborators when they came across surprising results. They witnessed that the zinc-based therapy was causing blood pressure to decrease.

“This surprised us because it wasn’t a known function of zinc. After working for several years with international collaborators, we were able to demonstrate that zinc levels were coordinating the behaviour of muscles that surround blood vessels to make them either relax or contract,” explained A/Prof Ayton.

This major discovery presents zinc as a possible drug target to treat vascular diseases such as high blood pressure and could offer an alternative therapeutic option to patients where current calcium-based therapeutics are not adequate.

It also gifts scientists a missing link in the correlation between zinc and cardiovascular diseases and can act to explain the complex relationship between metals and blood pressure.

“This discovery challenged what was the accepted scientific understanding that calcium and potassium were the major metals controlling blood flow. Our findings suggest that zinc, in fact, complements the roles of these other metals. We were able to show that an increase in zinc levels in blood vessel cells caused veins and arteries to relax and blood pressure to decrease,” said Dr Betrie.

Intriguingly, the research also showed that blood vessels in the brain and heart were more sensitive to changes in zinc than those in other areas of the body. Why this is the case is an area of current investigation by the team who are exploring the effects of zinc on blood flow in the brain, paving the way to develop zinc-based treatments for neurological conditions like Alzheimer’s disease. The findings are additionally anticipated to spark new lines of research and clinical investigation to better understand and appreciate the full effects of zinc and other metals in biological functions.
Clinical researcher and neurologist Professor Vincent Thijs has been on the front line of stroke research for decades, helping develop stroke treatments used around the world. After witnessing the impact stroke had on his patients and their families, he resolved to dedicate his career to improving the outcomes for people who experience stroke.

Prof Thijs, Co-head of our Neurovascular Theme, explains what led him down this path of innovative brain research and his current investigation into a novel stroke treatment at the Florey.

The early years

“I began my career in 1995 when stroke was very common but health systems weren’t well equipped to treat people with stroke. Since then, I have witnessed a revolution in the field of stroke treatment and now we have better techniques to treat people. I’m proud to know that my work has helped steer and shape many of these changes.

The challenge clinicians now face is how to improve the recovery of people who have experienced stroke. How do we harness the biological mechanisms that are important for brain repair and apply these in a clinical way?”

Advancing scientific knowledge

“A couple of years ago, patients in my clinical practice began enquiring about etanercept, a drug approved in Australia to treat rheumatoid arthritis and psoriasis. There was anecdotal evidence for its effectiveness in stroke recovery, but there was no scientific proof on whether etanercept was a viable treatment candidate.

To fill this void in knowledge, my team are conducting a clinical trial. The trial takes a novel approach towards stroke treatment by repurposing etanercept and evaluating it as a potential treatment candidate for stroke.

I have patients who are at their wits end facing the effects of stroke and there is currently nothing pharmacologically that can improve their outcome. Etanercept presents an opportunity to explore if it can help.

Through our research, we aim to build scientific evidence on the safety and effectiveness of etanercept in order to improve the quality of life for people who have experienced stroke. Brain repair is a very difficult area of science so while I hope for a breakthrough, as a scientist, I have to remain neutral on if something will work or not.

I’ve always considered that science helps you see the challenges and identifies needs that aren’t being met. Working as a clinician helps you see the impact of your research on patients directly. It makes it hugely rewarding to be both a clinician and a researcher.”
An innovator in brain research

Biomarker breakthrough in predicting rare epilepsy.

Our researchers continue to uncover new information about the rare and devastating condition Sudden Unexpected Death in Epilepsy (SUDEP) that is helping scientists better understand the cause of the condition and advance the development of novel biomarkers to predict those at risk earlier.

“Changes to the KCNH2 gene cause a ‘loss-of-function’ in ion channels and what results is dysfunction to the heart’s electrical messages that regulate heart rhythm,” explained Dr Soh.

The team’s research, which followed earlier investigations into the causes of SUDEP, found that common variants of this gene were expressed three times higher in people who had experienced SUDEP compared to people with epilepsy who had not. For rare forms of the variants, which are known to disrupt the heart’s ion channels even further, this increased to 11 times.

“What we suspect could be occurring before a SUDEP event in individuals who have variants in their KCNH2 gene is that interruption to the heart’s electrical activity, combined with the impact of a seizure, may cause the heart to stop beating,” said Dr Soh.

The study contributes new information to help scientists and clinicians understand cardiac factors that could underpin SUDEP. It also opens opportunities to better diagnose and manage the condition.

“Our findings present loss-of-function variants of the KCNH2 gene as possible predictive biomarkers for SUDEP. Such biomarkers could be used clinically to identify those at risk of the condition much earlier than we are able to currently,” said Professor Reid, Head of our Networks and Neurodevelopment Theme.

The team is continuing its research by investigating how the brain and heart function together at the time of a SUDEP event.

“It is our hope that this work can lead to a future where biomarkers and genetic screening tools can inform treatments and effective management strategies for people living with epilepsy, and ultimately save lives that would otherwise be lost to SUDEP,” said Professor Reid.

Sudden Unexpected Death in Epilepsy (SUDEP) at a glance:

• Effects around 1 in 1,000 people living with epilepsy each year.
• Most frequently occurs in young adults with severe uncontrolled seizures.
• A complete understanding of its causes is unknown. Research at the Florey is working to change this.
Our impact in 2021 as an innovator in brain research.

Our research was published in over 195 scientific peer-reviewed journals spanning early, middle and late-stage investigations of brain and mind conditions.

More than 28,000 people kept up to date with our research advancements by following our social media accounts.

We launched a think tank to bring together Florey neuroscientists to further advance our research in COVID-19.

We were a trusted global media source for scientific expertise with over 550 news stories featuring our work and researchers.
A hub for enriching partnerships.

We unite people, ideas and organisations to solve complex problems that transform society.

To maximise the impact of our research to benefit society, the Florey works closely with research partners, community groups, health services and industry. It takes many minds working together to produce cutting edge research, discoveries and innovations. We believe collaboration is key to our success. Using our collective strengths, capacity and capital, we advocate and work towards solving the greatest challenges of our time in brain and mind science. Our reputation as a global leader and a hub for neuroscience continues to grow as we establish new and robust partnerships.

Dr Shawna Farquharson, Chief Research Radiographer, and Jane Loutit, Research Assistant.
Danielle Williams survives each day on a wink of sleep and the hope of better times ahead for her two daughters.

What first appeared as eye lid flutters at 13 months of age led to both her girls, Jaeli and Dali, being diagnosed with a rare genetic epilepsy. Caused by a mutation in the SYNGAP1 gene affecting neuron to neuron signaling, for the girls, this plays out as epilepsy, intellectual disability, movement and sleep problems, and developmental delays.

Jaeli, now 12, suffers more severely. She never sleeps more than a couple of hours in a row, her mental health is impacted and her seizures have evolved to tonic-clonics. Dali, too, communicates in single words and the 10-year-old has more of a “challenging” personality. Both girls are not toilet trained, and they need one-to-one care if they leave the home.

Since Danielle and husband Danny joined the Syngap community and helped establish the Syngap Global Network, where families and doctors around the world share information about treatment successes and failures, the Williams girls have avoided some degree of medication trial-and-error that typically plague epilepsy management.

But Danielle still has her sights set on the bigger picture.

“I’ve always been more interested in that long-term cure than little short-term incremental changes,” said Danielle. “I’m much more interested in chasing that dream.”

“I’m going to conferences where I’m hearing that in mice, they’ve reversed the SYNGAP1 gene mutation and they’re not having seizures, behaviorally they’re back to normal and intellectually fine. These are definite glimmers of hope.”

Her biggest shining light is research into a new type of precision medicine led by Professor Steve Petrou. After leading the Institute as Director for four years, he has stepped down from the top job to take this project to the next stage via a biopharmaceutical company he co-founded called Praxis Precision Medicines.

Based on over a decade of research conducted at the Florey, new Antisense Oligonucleotides (ASO) candidates have been developed to treat genetic epilepsies like SYNGAP1. ASOs are a type of gene therapy that acts on the RNA - the blueprint of our DNA’s genetic master plan. In this case, the aim is for the treatment to instruct cells to produce more SYNGAP1 protein.

Not only are families like the Williams set to benefit if the treatment works, the project would also be financially beneficial for the Florey through a commercial agreement with Praxis, based on reaching certain research milestones. Such an outcome would strengthen our capacity to undertake further cutting edge research for community benefit.
“Turning our discoveries into commercial products and benefiting from those is something we’re trying to do at the Florey across multiple areas,” Prof Petrou said.

“Who knows how many will be successful? But you need multiple shots at goal. One or two of them can bring enormous success for the organisation and generate hundreds of millions of dollars, so the Institute can sustain itself and keep making the significant impact on people’s lives that it currently does.”

The Williams sisters were among the first in Australia to undergo whole genome sequencing in 2016. When Jaeli and Dali were diagnosed, they doubled the number in Australia and were among less than 100 in the world with the diagnosis. While it gave their parents a name to explain the challenges their girls faced, the couple quickly turned their attention to finding their role in the hunt for a treatment which sparked their long-standing partnership – now going on 6 years – with Prof Petrou.

Together, their eyes have been on the ultimate prize – a cure.

Their lobbying of Federal Health Minister Greg Hunt paid off, when in 2018 Prof Petrou received a Government grant of $500,000 via Epilepsy Foundation Australia for crucial proof-of-concept research into SYNGAP1.

The outcomes of those studies led to the Florey filing for Intellectual Property on this promising ASO, which saw Praxis make a commercial investment to turn the idea into an actual drug.

“The ASO focuses on increasing the amount of SYNGAP1 protein produced regardless of the mutation, so we could actually help everyone with this. If it works, it works big,” she said.

“My girls are such adorable children. I just want them to tell us how they’re feeling. My dream would be for them to advocate for themselves. If they could do that, all of those intellectual and communication issues would be good enough. For me, that’s the ultimate goal.”

“Together, their eyes have been on the ultimate prize – a cure.”

“Institutes and universities can’t do drug discovery on their own. They need to partner with specialist organisations whose purpose is bringing drugs to market,” said Prof Petrou.

Prof Petrou and his team have identified candidate molecules that increase the amount of SYNGAP1 in human cellular models. They will continue this work ahead of plans for first-in-human studies due to start in the next few years.

For Danielle, this research allows her to dream of a better future for her family.
Changing lives from day one.

The Australian Epilepsy Project brings together research, industry, clinical and advocacy partners to transform the medical journey of Australians living with epilepsy.

The need is great
Two and a half million Australians will have a seizure at some point in their lives. Epilepsy is not just about seizures; it is associated with increased injury risk, cognitive deficits and mental ill health, as well as reduced independence and quality of life, stigma and difficulty attaining work and study.

Epilepsy is responsible for over 300 Australian deaths each year of which two-thirds are preventable with optimal care. As Chief Investigator of the Australian Epilepsy Project (AEP) and world-leading neurologist and epilepsy researcher, Professor Graeme Jackson explains, access to expert care is limited and current treatment plagued with uncertainty.

“The clinical care journey in epilepsy for patients has, until now, lacked answers to the most basic questions, such as will this person have further seizures? What is the best medication? Could brain surgery be effective?”

He continued, “We know that the effects of epilepsy on an individual’s productivity and total years of life lost are staggering and worsened by this gap in clinical knowledge. The Australian Epilepsy Project is working to change this.”

Partnership key to success
The AEP brings together a consortium of world-leading experts in neuroimaging, genetics, neuropsychology, and artificial intelligence from the Florey Institute of Neuroscience and Mental Health, University of Melbourne, Austin Health, Monash University, The Alfred, and Auckland University of Technology.

The team also works closely with key ecosystem partners including Epilepsy Foundation Australia and Seer Medical.

In early 2021, the AEP was awarded $30 million from the Australian Government’s Medical Research Future Fund; the single largest Government investment made to epilepsy research in Australia.

The AEP fosters industry, research and advocacy relationships, and ensures that people with lived experience of epilepsy are engaged with all aspects of the project.

A new model of care
The AEP has established a new model of care through a platform model approach. Over the course of five years, the program will integrate cutting-edge imaging, cognition and genetics data to deliver a comprehensive and precise report into the hands of clinicians.

Enhanced with integration of artificial intelligence and machine learning, the AEP report tool aims to provide clinicians with greater predictive capability to treat each individual with answers to those once elusive questions.

People with lived experience of epilepsy are also integral to the AEP’s success. Around 4,000 Australians will be involved in the pilot stages of the project.

For more information on the Australian Epilepsy Project visit epilepsyproject.org.au.
Meet the stem-cell ‘super-lab’ advancing brain repair.

Understanding how the brain develops in early life is a key focus in the research of Professors Clare Parish and Lachlan Thompson, Co-heads of our Neuroregeneration Theme. Their theory is that by harnessing this knowledge they can develop stem cell treatments for brain repair.

Working towards this goal has led to a research partnership now 12 years and counting, forming what they call a neuroregeneration – or brain repair – ‘super-lab’ which brings together their individual groups to conduct research in tandem.

“It’s an advantageous model where one arm focuses on using stem cells as a framework to understand certain events in the brain, while the other arm investigates stem cell therapies and approaches,” said Prof Parish.

The duo say that this multi-faceted approach has benefited their research in a number of ways.

“On a practical level, we both bring different technologies and skill sets to projects, while intellectually we think differently about how to tackle challenges and solve problems,” said Prof Thompson.

Their partnership has also fostered a dynamic and diverse environment for the students and postdoctoral researchers in their groups.

“Although we run individual groups, many of our activities are conducted jointly. This provides greater opportunities for our teams to share ideas and collaborate on different projects given there are more people to engage with,” said Prof Thompson.

Their unique, merged group model has enabled research to flourish. The duo are currently investigating a stem cell therapy for Parkinson’s disease with the aim of moving to clinical trials within a few years.

“By looking at how stem cell therapies could promote plasticity, replace cell types and protect or promote events in the brain, we hope to stop or reverse disease progression,” said Prof Parish.

“We are very close to achieving our goals and I don’t think that would be the case had we not worked together. There is far more to be gained in the long run by working collaboratively,” said Prof Thompson.

“Our partnership works because we both have a similar work ethic and a shared goal. We want to know that at the end of our careers we’ve made a difference to understanding human health or treating a disease,” said Prof Parish.
Florey in the spotlight.

“Scientists discover strong link between gut and brain cells”

“The Conversation”

“How does COVID affect the brain? Two neuroscientists explain”

“MELBOURNE DOCTORS CREATE NEW TOOL FOR YOUNG STROKE PATIENTS”

“The Canberra Times”

“NEW TEST TO UNLOCK MEMORY DISEASES”

“Blood test for early dementia could slow onset of Alzheimer’s disease”

“CURBING EMOTIONAL EATING”

“Stem cell treatment could reform Parkinson’s disease management”

“Covid’s Long Scary Tail”

“Stem cell treatment could reform Parkinson’s disease management”

“MELBOURNE DOCTORS CREATE NEW TOOL FOR YOUNG STROKE PATIENTS”

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“MELBOURNE DOCTORS CREATE NEW TOOL FOR YOUNG STROKE PATIENTS”

“Stretching the neurons: Tackling neurological conditions through brain plasticity”

“Record investment in epilepsy research made from the Medical Research Future Fund”

“Covid’s Long Scary Tail”

“Record investment in epilepsy research made from the Medical Research Future Fund”

“Stretching the neurons: Tackling neurological conditions through brain plasticity”

Read more about these stories and keep up to date with all our research news by visiting the Florey website and following us on social media.

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The Florey Institute of Neuroscience and Mental Health
The Florey Institute of Neuroscience and Mental Health
A fellowship of hope to change the face of mental illness.

The Florey and One in Five have joined forces to provide hope for those living with complex mental illnesses like schizophrenia.

Thanks to a three-year One in Five McIver Research Fellowship, inaugural recipient Associate Professor Jess Nithianantharajah is working to understand what happens in the brain in schizophrenia that leads to cognitive and mood symptoms, and develop new treatments.

Gabrielle Sheehan, Chair of One in Five, said the awarding of a fellowship was made possible through the generosity of the McIver family.

“We know that mental illness research often lacks the funding for novel research that focuses on understanding the underlying biological mechanisms of complex illnesses. This fellowship provides a talented scientist with three years of funding security so they can push forward with bold ideas and make a massive step forward in the search for effective treatments for mental illness”, said Gabrielle.

A/Prof Jess Nithianantharajah, Co-head of our Mental Health Theme, said she felt humbled and inspired by One in Five’s support and championing of discovery mental health research to deliver transformative change for people living with schizophrenia.

“More than 20 million people worldwide live with a diagnosis of schizophrenia and experience cognitive symptoms, for which we currently have no effective treatments. There is a major unmet need to understand the biological mechanisms that underpin deficits in flexible decision making, learning and memory to generate improved therapeutic options that better target these symptoms in a personalised way.

“Over the next three years, my team’s research will take a translation focused approach to investigate how disruptions in the balance of excitatory-inhibitory connectivity in the brain leads to specific deficits in cognitive processing and regulation of mood.

As part of this, my team will use models that we’ve developed to identify brain signatures that underlie these disrupted behaviours, by measuring real-time changes in neural activity in genetic and pharmacological models of schizophrenia, and examine the efficacy of novel therapeutic targets to reverse these neural and behavioural impairments.”

The team’s research is hoped to lead to new therapeutics which specifically target the cognitive symptoms experienced by people living with schizophrenia, providing new hope to millions.

Jill McIver commented on what the fellowship means to her and her family.

“I am so pleased about the One in Five McIver Fellowship and know my brother, sister-in-law and nephew, Greg, Judy and Matthew McIver, would be incredibly proud. After a battle with mental illness, Greg and Judy lost their beloved son, and only child, Matthew, in 2005. Following this devastating loss, they became loyal supporters of One in Five and were both passionate about the need to fund medical research to find cures. Tragically, Greg and Judy, along with my Mum, May, passed away in the Black Saturday fires and left behind a lasting legacy for mental health research, providing hope that one day we may find a cure.”
In 2021, we continued to connect with community about the important research being undertaken at the Florey and bring to life the fascinating workings of our brain. A bespoke partnership series created between the Florey and ABC Radio Melbourne welcomed Florey researchers into the homes of listeners in the evenings to engage on a range of neuroscience topics, including memory, gut and brain communication and brain plasticity.

**Dr Chris Tailby, Neuroimaging and Neural Networks Theme.**

“Our current understanding is that every time a memory is recalled, which can be triggered by a specific smell or conversation, the brain reconstructs all the different elements of the memory anew.”

Our memory research enables us to discover ways to treat memory afflicted diseases like dementia and epilepsy.

Cognitive neuroscience is the final frontier, the great unknown of our time. We’re only at the tip of the iceberg in understanding the intricate system that works to drive neurological processes like memory.

**Professor Anthony Hannan, Head of our Prevention, Genetics, Epigenetics and Environment Theme.**

“Over the course of our lives, our brain builds new connections and even changes structurally as it adds and processes new information. This is called brain plasticity.

After a neurological event, or onset of a brain disorder, extraordinary plasticity occurs to remap areas of the brain where function has been lost.

Our research in Huntington’s disease demonstrates that brain conditions can absolutely be modified by environment.”

**Dr Martin Stebbing, Systems Neuroscience Theme.**

“While hormones and gut bacteria are recognised as key players in gut and brain communication, the third and biggest player is the nerves that make up our enteric nervous system.

It’s much easier preventing gut conditions than curing them. Simple lifestyle choices like a healthy diet, regular exercise and avoiding smoking can help prevent serious gut diseases before they develop.

Our research investigates the beneficial effects of using implanted devices in the gut that deliver electrical stimulation to offer people with gut diseases relief via the nervous system.”
Our impact in 2021 as a hub for enriching partnerships

We filed five new intellectual patents, working towards generating commercial benefit for the Florey and future therapeutic benefits for Australians.

We partnered with Science Gallery Melbourne to create an interactive living lab exhibition exploring mental health that combines art, health and science.

We enrolled participants into our 62 clinical studies to investigate ways to prevent and treat a range of neurological conditions.

We hosted the 2021 Brain symposium that brought together over 140 neuroscientists across 6 institutes from the Melbourne medical precinct to push the frontiers of neuroscience discovery and translation.
Dr Leigh Walker, Senior Research Officer within our Mental Health Theme.
A place for empowering people.

We are an inspiring, public-good organisation with a deep commitment to equality, diversity, respect and integrity.

The Florey supports our staff and students in their tireless pursuit to advance humanity through brain and mind research. Home to over 600 neuroscientists and professional staff, we enhance interdisciplinary collaboration, facilitate innovation and create opportunities for our researchers to empower and inspire the next generation of neuroscientists and leaders. With an unwavering commitment to diversity and inclusion, we are a place for people to come together and share ideas. We provide tremendous opportunity for our workforce through professional development activities, mentoring and training to further advance and expand their skills.
The secret to the Florey’s success is our staff and students and their tireless pursuit to discover the secrets of the brain. Connected by our shared mission to improve lives through brain and mental health research, hear from some of the people who make up the Florey and about what motivates them.

This inspiring campaign, highlighting our people’s stories and their passion for the work they do, was designed and developed by Rebecca Singleton and Rachel Peiris as part of a 10-day internship with the Florey’s Public Affairs team, along with input from the Florey’s Equality in Science group.

The Florey internship program provides interns ‘hands-on’ experiences in science communication, commercial applications of research and translation projects with mentorship from support service staff.

Dr. Ian Birchall, Histologist

Histology is the study of the microscopic anatomy of tissues using a light or electron microscope. My job is still my hobby. Every day I apply a range of histological techniques to demonstrate the extent of changes in the brain and other tissues that contribute to researchers understanding of how these microscopic changes play a role in function and structure. There are more than 60 billion neurons in the brain and far more glial cells. In fact, there are more connections in between neurons than there are stars in our galaxy.

Jacquie Munro-Smith, Student Support Officer

As Student Support Officer at the Florey I assist postgraduate students across their candidature, from day one of their research program to the day they click submit on their final research project. In medical science, every piece of research leaves a lasting legacy and even the smallest of discoveries have the potential to lead to new therapeutic treatments. Through this time, you get to know the students and watch them grow into exceptional scientists. I always joke that I’ll eventually do a world-trip just to see all the students that I have assisted across my career.

Kevin Law, PhD Candidate within our Neuroregeneration Theme

When I was an undergraduate student, a friend of mine was involved in a terrible traffic accident and succumbed to traumatic brain injury. The surgeon said there wasn’t anything they could do to help. I couldn’t believe there was this massive gap when it came to treating brain injury. I was always fascinated with the human body and interested in science, but this incident inspired my curiosity in the brain and to use my skills to help bridge this gap in brain injury. I have found my passion in science and can honour my friend’s memory.
“Through this internship, I was able to develop new skills that complemented my traditional scientific training and meet many interesting people working at the Florey,” said Rachel Peiris.
During 2021, our various committees at the Florey joined forces and supported each other’s mental health and wellbeing by engaging in creative professional development opportunities for success.

**Milestone celebration**

The Students of the Florey Institute (SOFI) celebrated 29 Florey students who published their first research publication in 2021 with an awards night. Each student received a mug with the title of their journal paper to acknowledge the unique contribution they’ve made to the scientific understanding in brain and mind science.

**Inaugural Conference**

The Florey Research Assistant (FloRA) community held their first conference in 2021 featuring keynote speaker and Florey Group Head Michele Binder who outlined her career journey from research assistant to laboratory leader. The conference also featured a panel of exceptional Florey research assistants who discussed their passion for brain and mind research.

**Mentoring and career development**

The Florey Postdoctoral Association (FPA) launched a peer-mentoring program with SOFI to guide the next generation of neuroscientists in their professional career and partnered with FloRA to host career-enhancement workshops.

**Learning from leaders**

The Florey’s Equality in Science Committee (EQiS) along with support from the Florey support services welcomed Lisa Annese from the Diversity Council Australia to speak about translating awareness into action for Florey’s 2021 International women’s day celebration.

**Thank you to our 2021 Committees**

The Florey extends a sincere thank you to our committee members for their continued support of the Florey community.

**EQiS Committee:**

Carli Roulston, Scott Ayton, Nirma Perera, Qiao-Xin Li, Shaz Sivanesan, Abdel Ali Belaidi, Kim Kwan, Judith Walker, Julie Bernhardt, Michelle Binder, Snezana Maljevic, Claire Cuddy, Carolina Chavez, Myrte Strik and Alice Whitehead.

**FPA committee:**

Thomas Handley, Remika Mito, Christiana Mattei, Myrte Strik, Luca Godenzini, Duncan Crombie and Daisy Dastpeyman.

**SOFI committee:**

Brandon Richards, Kevin Law, Maria Kuznetsova, Xavier Maddern, Raoul Das, Chiara Pavan, Ulysse Thivisol, Josie Glesen, Arwa Alrehaili, Jacqueline Heighway, Katie Lewis, Evie McVicar, Elena Regele-Blasco and Paul-Marie Beau.

**FloRA Committee**

Celine Dubois, Jamie Liew, Donna Parker, Olivia Ryan, Laura McCambridge, Alex Billet, Emily Lamb, Katherine Lim, Shanshan Li, Chaseley McKenzie, Alicia Sedo, Lucija Peric and Liubov Lee-Kardashyan.
The big, bold $100,000 idea.

In late July 2021, the Florey set out a big, bold challenge for our researchers.

A six figure, $100,000 internal grant was on offer for an innovative and collaborative project that explored a novel scientific idea and supported the mission of the Florey Institute to advance humanity through brain and mind science.

Our then Clinical Director and lead architect of the challenge, Prof Trevor Kilpatrick, said the inspiration for this idea came from the understanding that innovation thrives when you gather the best and the brightest together and challenge them to solve a problem.

“The Florey is home to over 600 staff and students, and we wanted to encourage the creative and multidisciplinary spirit of our researchers.”

“In science, bold new ideas are sometimes constrained by traditional funding limitations. The 100k challenge allowed our researchers to think outside the box, form new scientific teams within the Florey and tackle a problem that had previously been untouched.”

Ideas were submitted in the form of a research proposal and assessed by the Florey’s Director, Clinical Director and Division Heads with joint deliberation by Heads of Enterprise and Innovation and Strategy and Public Affairs.

Proposals had to meet a range of criteria, including impact to the field of neuroscience and mental health, feasibility and uniqueness of the idea, expected research outcomes, and scalability into a larger, future research endeavour.

“We were overwhelmed by the number of high-quality, worthy proposals that we received. We congratulate A/Profs Yugeesh Lankadeva and Scott Ayton whose proposal was selected,” said Prof Kilpatrick.

“This challenge is an investment into the future. We hope the results can one day change the course of how we think and impact peoples’ lives.”

“Until now, Scott and I have never had the chance to unite our research behind a common purpose. This 100k challenge is a really exciting opportunity because it enables us to generate strong pilot data to take forward into further investigatory opportunities,” A/Prof Yugeesh Lankadeva.

“This consolidation of our multidisciplinary approaches will help us gain better understanding of disease mechanisms. We thank the Florey for the investment in our research teams and this opportunity which will act as a foundation for a new long-term collaboration,” A/Prof Scott Ayton.

The big, bold idea: A new therapy to prevent acute brain and kidney injury arising from heart surgery.

A/Profs Lankadeva and Ayton are working to establish a world-first large animal platform for drug and biomarker discovery to preserve brain and kidney health in patients undergoing heart surgery requiring the use of a heart-lung machine. Their work aims to fill an existing unmet therapeutic need and significantly improve health outcomes.

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When Tim Boehm, the father of a baby girl, Ebony, who was born with a severe form of rare genetic epilepsy reached out to Professor Chris Reid, he couldn’t have imagined how it would change their lives.

Prof Reid, Head of our Networks and Neurodevelopment Theme, and Dr Lauren Bleakley have worked tirelessly over the past four years to improve life for Ebony, her family, and other children with rare genetic epilepsies.

Bubbles, music, water play and spending time with her family are some of Ebony’s favourite things. She loves to walk with her hot pink walking frame, say ‘hello’ to people she meets and communicate in her own way with just a small number of words that she can speak.

Ebony has a severe form of epilepsy and developmental delay caused by a very rare genetic mutation in her HCN1 gene. She had her first seizure when she was only three months old and at its worst, experienced up to 20 a day. No treatments are available to fully control Ebony’s epilepsy or improve her development.

Inspired to help Ebony, Prof Reid and Dr Bleakley have been on a mission to understand the cause of her condition. In 2021, they published a world-first study involving the creation of an aptly named ‘Ebony mouse’ research model uncovering the underlying mechanism.

“Ebony’s genetic mutation results in her HCN1 channels acting like a leaky tap, continually allowing current to flow through and causing neurons to fire more readily, which leads to seizures,” explained Dr Bleakley.

The team is now using the model to determine if anti-epileptic drugs could help reduce Ebony’s seizures, in addition to developing a precision medicine to target the mutant HCN1 channel and address the cause.

Prof Reid said this research gives hope that treatments are possible for Ebony and other children with genetic epilepsies.

“This mouse model is a tool with the potential to not only help the 50 patients we know have this condition currently around the world, but the hundreds that are going to be born with mutation in the HCN1 gene going forward.”
What grew from a philanthropic seed.

“When former Florey Director, Professor Geoff Donnan, presented us with the opportunity to provide Professor Chris Reid with financial support for 3 years to continue his research at the Florey we were delighted. It has proved to be a valuable outlay as he and his team have produced outstanding results, like this work for Ebony and other children with rare genetic epilepsies.

Sometimes we are asked why we chose the Florey as our major charity. Unlike other causes, the Florey covers more than 20 brain diseases, including Parkinson’s, Motor Neuron Disease, concussion, addiction, mental health and many more. This means that nearly every Australian family could be adversely affected by a brain disease at some stage of their life that is studied at the Florey.

Our financial support ensures that they can continue their research. We feel that there is a shocking waste of our brightest scientists’ time in writing up funding request letters which, sadly, are not all fruitful and, in fact, funding is becoming harder by the minute.

Our establishment of the Florey Future Fund can act as a vehicle, whereby the Florey will have a guaranteed source of ever-increasing income to continue its important research.” – Wendy Dowd AM
A giant rainbow hamster wheel striving to improve mental health.

Frequently used as an analogy of being stuck in a cycle, the hamster wheel has been reimagined in a bold new experiment at the Florey that shines an important light on the parallels between the healthy brain, regular exercise and mental health.

Taking residence at Science Gallery Melbourne, the exhibit harnesses a concept called ‘citizen science’ where members of the public engage at their own pace with a huge rainbow human-sized hamster wheel or a rainbow handwheel enriched with sensors to measure activity on how peer approval affects exercise motivation.

Leading the work, Dr Emma Burrows says this interactive living lab is helping gather data on how physical activity - made fun with colour, laugh and play - can protect our mental health.

“Through my work, I’ve seen the positive effects that exercise can play in boosting brain plasticity, mood and memory,” said Dr Burrows.

“What ‘Wheel’ aims to illustrate is that exercise doesn’t have to be a gruelling task - we can all find different and novel ways to exercise that are joyful.”

Research demonstrates that regular exercise offers a range of benefits, with 30 minutes of daily exercise shown to improve cerebrovascular health, cognitive function and protect our mental health.

Partnering with renowned Japanese Australian artist Hiromi Tango, the two were inspired to create a positive, playful environment that explores how movement impacts motivation, mood and ability to learn.

“What moves us is not a number or a measurement. It’s art, emotions and smells and agony and human mistakes or chaos or experimentations,” said Ms Tango.

“The laughter of people using ‘Wheel’ is infectious. I like to think of exercise as mood medicine,” said Dr Burrows.

“Hiromi and I hope that our collaboration on this experiment can provide insight into what factors can help us to maintain regular activity over time to build a brain reserve that protects us throughout life.”

Wheel at a glance

- As people run, walk or use the handwheel, sensors on the exhibition track kilometres travelled, top speed and time spent exercising.
- A live stream of the action is captured, allowing people to watch and cheer through a ‘like’ button.
- The data gathered explore how peer approval affects motivation and what key ingredients help us to stay on the wheel to improve our mental health through physical activity.
Our impact in 2021 as a place for empowering people.

We proudly saw 29 Florey students have their first journal paper accepted, marking a start to their contributions to the global scientific knowledge.

We hosted the 2021 Australasian Course in Advanced Neuroscience which brought together the next generation of bright minds in neuroscience and equipped them with advanced skills in state-of-the-art experimental techniques.

We offered seven of our early career researchers media training with the Australian Science Media Centre to upskill in communicating scientific knowledge to the general public.

Our researchers contributed to the Australian Science Academy’s Reboot STEMM Think Tank to consider strategies for a more inclusive and diverse way of defining, recognising and rewarding success in science.
Our heartfelt thanks to all who support the Florey.

Philanthropy and family inspires world leading stroke research

Philanthropy provides the empowerment, seed-funding and capacity building for researchers to think boldly and act with confidence to make discoveries, like that of Florey stroke researcher Professor Julie Bernhardt AM.

Julie was just 16 when her uncle Barry experienced a stroke. The saying goes that stroke doesn’t just affect the individual but affects families, which was certainly true for Barry, his wife Ronda and their sons. It also profoundly affected Julie, who was inspired to become a physiotherapist and dedicate her career to stroke research after watching her uncle’s rehabilitation and recovery journey.

As Julie watched her uncle Barry adapt to challenges after his stroke, she became fascinated with the brain. But frustrated with the absence of evidence to help make decisions about the best treatments to improve recovery, she completed a research training degree (PhD) in motor control in the late 1990s. This equipped her to develop and study new ways to treat people with brain injury to improve their recovery.

Over the years, Ronda and Barry encouraged Julie’s work and she quickly developed an acute sense of the long-term impact of stroke and the importance of striving for good quality of life despite the challenges it presented. Ronda also understood that more funding continues to be needed to accelerate the rate of finding better treatments for people who have experienced stroke. Despite the common and devastating effects of stroke, philanthropic support for stroke research has historically been surprisingly modest.

Now 91 years old, Ronda’s interest and philanthropic support for Julie’s work has been constant and impactful.

“It is rewarding to watch and assist the contributions to stroke treatment led by Julie and her team. I understand the impact and frustrations caused by stroke and am so happy that our family can help,” said Ronda.

Over the past seven years, Julie’s team have investigated and identified the major unmet needs of younger people who experience stroke. Thanks to this foundation of research, Professor Julie Bernhardt and Professor Vincent Thijs, Co-Heads of the Stroke Theme at the Florey, are now leading Australia’s first comprehensive young stroke service out of the Institute.

Their vision is to create an all-in-one service connecting people aged 18-45 who have experienced a stroke with care providers and peer support to enable long-term recovery.

“This collaborative project will build, test and embed an innovative, digitally-enabled young stroke service to overcome geographic boundaries and better meet the long-term care need of young people who experience stroke,” said Julie.

The project is made possible thanks to funding from the Australian Government and added philanthropic support of a significant donation from Ronda and her family. It is support, like that of Ronda and others, that allows researchers to conduct proof of concept research on neurological conditions like stroke.
Message from the Florey Fundraising Committee Chair, Mr Ross Oakley OAM.

A sincere heartfelt thanks to you and all donors for the continued support of the Florey. Although the pandemic has created uncertainties in recent years, it has never been clearer that investment in medical research is the way forward if Australia is to live with COVID-19 and other diseases – some of which are still unknown.

During my time at the Florey, I’ve seen our commitment build stronger and more sustainable relationships with our donors and industry partners for research funding. To further consolidate this effort, the Florey Foundation Council has now been restructured and has established a Florey Board Fundraising Committee to reflect the Board’s commitment and its recognition of the importance of fundraising for the Institute into the future. We have also appointed Mr Eric Cheng, Executive Manager of Philanthropy and Fundraising, to lead our dedicated philanthropy team and the Institute in its fundraising endeavours to support our brain research team.

Thanks to your generosity, I am confident that the 600 Florey staff and students will continue to advance our neuroscience and mental health knowledge to create better outcomes, treatments and solutions for more than 20 brain diseases that directly affect 5 million Australians each year. On behalf of the Florey board, staff and students I thank you again for your support!

Philanthropy often assists in generating research evidence needed to attract subsequent grants from government or commercial partners, which help to further knowledge, translate discoveries into clinical treatments or progress to clinical trials. It is a driving force behind the ‘bench to bedside’ approach in medical science and is a key part in every researcher’s journey to undertake bold, impactful work to improve the human condition – the core mission of a scientist’s life-long endeavour.
Acknowledgment

of our donors

Donations under $1,000
During 2021, our scientists have continued their pursuit to advance humanity through brain and mind science. Contributions from generous benefactors, alongside government grants, provide essential funding to allow our researchers to follow up on ideas and innovations as they emerge. The generous support we receive from donors, corporations, foundations and community groups is driving our ability to make discoveries to better diagnose, treat and prevent the diseases of the brain and mind that we study.

We are grateful to all our supporters for joining us in our quest to improve lives, in Australia and all over the world.

Donations under $10,000


Major Donors $10,000 to $1,000,000+

Alice O’Brien Research Trust | Alice Williams | Andrew Darbyshire AM | Andrew Eddy | Andrew Keen | Angela Bladener | Anthony & Helen Pyman | Barbara Darvall | Bruce Moran | Caroline Robertson | Carter Family Foundation | Christine Aarons | Dennis & Fairlie Nassau | Don Martin | Donald Bennett | Kate Joel | Lana Moran | Linda Herd | Lyndsay Cattermole AM | Nicola Rollowson | Peter & Lois Lumsley | Peter & Sandra Gillooly | Peter Nixon AO | Ross Oakley OAM | The Alfred Fellowship | The Alfred Fellowship | The Collier Family | The Minderers Foundation | The Owies Family Trust | The Stuart Leslie Foundation | The Valda Klaric Foundation | The Yulgilbar Foundation | University of Melbourne | Young Ostomates United

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Annual Report 2021

Gifts in Wills

Estate of Beatrice Olive Williams | Estate of Doreen Merle Taylor | Estate of Doris Carter | Estate of Elizabeth Mary Butt | Estate of Ethel May Billing | Estate of Henrietta Ethel Schefferle | Estate of Joe Zadnik | Estate of Joyce Winsome Woodroffe | Estate of Kenneth William Berkelman | Estate of Marjorie Constance And | Akos Talan | Estate of Mary Lugo | Estate of Michael Francois Boyt | Estate of Sylvia Gelman

Grants

Alzheimer’s Association | Bethlehem Griffths Research Foundation | Brain Australia | Dementia Australia Research Foundation | FightMND | Foundation for High Blood Pressure Research | Hereditary Disease Foundation | MND Research Institute of Australia | MS Research Australia | Stafford Fox Medical Research Foundation | The Heart Foundation | The Jack Brockhoff Foundation | The Lionel & Yvonne Spencer Trust

Trust Companies

Australian Philanthropic Services Foundation | Equity Trustees | Mutual Trust Foundation | Perpetual Trustees Ltd

Travel Award Donors

Andrew Darbyshire AM | Deirdre Collier | Estate of Wally & Jean Jackson | Harold Mitchell Foundation | John Milne | Scientixx Pty Ltd

Community Fundraising

Belmont Hotel Fundraiser | Kellie Adams | Bronte’s Birthday Fundraiser | Gail’s Birthday Fundraiser | Get it off Mark | Greg’s Birthday | Help Ebony be Seizure Free | Boobom Hill | Jane’s Birthday Fundraiser | Jane Canaway | Kellie & Taylor’s Birthday Fundraiser | Kellie Adams | Ladies back on your bike | Jacinta Costello | Mai’s Birthday Fundraiser | Mai Rogers | Mindful Miles | Matthew Eddy | Phoenix Raj’s Birthday Fundraiser | Susan’s Birthday Fundraiser

In memoriam appeals

Geoffrey Brayne | Alasdair C Gordon | Geoffrey Wingfield Harris | Carlo Iovenitti | John Labram | Christine Makin | Alan Naylor | Clifford Noble | Jillian Sales | Paul Stevenson | Diana Stuart
Financial Snapshot 2021

Sources of Income 2021

- Government: $33.7
- Commercial: $23.4
- Non-Govt Funding Bodies: $9.0
- Philanthropy: $6.8
- Investment: $3.2
- Other: $3.1

Total Income: $79.2

Income

- Grants: $41.8
- Commercial: $23.4
- Philanthropy: $6.8
- Other: $7.2

Total Income: $79.2

Expenditure

- Salaries and wages: ($45.5)
- Direct & indirect research expenditure: ($25.8)
- Depreciation & amortisation: ($3.9)
- Other: -

Total Expenses: ($75.2)

Surplus: $4.0

Financial Position

- Current assets: $102.2
- Non-current assets: $60.1
- Total assets: $162.3
- Liabilities: ($38.7)

Net Assets: $123.6

Investments Dec 2021

- Available-for-sale investments: $42.0
- Term deposits: $49.0
- Cash-at-bank: $4.1

Total: $95.1
About the Florey

The Florey Institute of Neuroscience and Mental Health is the largest brain research centre in the Southern hemisphere specialising in diseases of the brain and mind. Over 4.7 million Australians each year are directly affected by the illnesses we study. We are a world leader in discovery science, imaging technologies, clinical trials, population studies, data analytics and more. Our scientists share a common goal – to improve the lives of people through our brain and mind research.

Conditions we study include:
- Addiction
- Alzheimer’s disease and other dementias
- Anxiety
- Autism
- Bipolar disorder
- Cardiovascular disease
- Concussion
- COVID-19
- Depression
- Digestive diseases
- Epilepsy
- Huntington’s disease
- Motor neurone disease
- Multiple sclerosis
- Parkinson’s disease
- Schizophrenia
- Stroke
- Traumatic brain & spinal cord injury

Some of the ways you can help fund our research:
- Future-proof research through the Florey Future Fund
- Include a gift in your will
- Donate today

Phone: 1800 063 693
Email: fundraising@florey.edu.au
Online: florey.edu.au
Post: The Florey, Reply Paid 83037, 30 Royal Parade, Parkville VIC 3052

Donations to the Florey Institute of Neuroscience and Mental Health of $2 or more are fully tax deductible.