Acknowledgement of Country

The Florey acknowledges the Traditional Owners of the land on which we work, the people of the Wurundjeri and Boon Wurrung peoples of the Kulin Nations. We pay our respects to their Elders, past, present and emerging.
About The Florey

The Florey is the largest brain research centre in the southern hemisphere, with teams of researchers dedicated to finding solutions for a range of neurological and psychiatric conditions.

Our expertise, collaborations and world-class facilities mean that our ideas can be efficiently translated into new treatments and ways to effectively diagnose these conditions.

Our vision
To advance humanity through brain research, improving the physical and mental health and wellbeing of people globally.

Our values
We are experts in brain research, promising excellence, leadership and dedication to our work.
We are curious about brain science and are inspired by the experiences, work and ideas of our community.
We are a youthful, active institute with a go-getter attitude, meeting urgency with innovation.
We are driven to enhance quality of life and improve health through our focus on brain research.

The Florey at a glance:

- 500 staff – including over 350 researchers and students.
- Expertise in 20+ neurological and psychiatric conditions.
- Over 5 million Australians are directly affected by the conditions we research.
- More than 830 publications sharing our discoveries with the global research community.
- More than 200 live projects being led by Florey researchers.
- An independent board, an executive and a faculty of world-leading experts in brain research.
A message from our Chair

On behalf of the Board of The Florey, I am delighted to present The Florey’s 2022 Annual Report.

2022 has been a pivotal year for The Florey – it was a year that saw the beginning of a renewed scientific vision, missions and culture with the implementation of the Future Florey Project. This project has set a new strategic direction for The Florey, focusing our research on four core missions – dementia, epilepsy, mental health, and protecting and repairing the brain.

Key to our strategy is forging closer links with commercial partners both in Australia and abroad and working more closely with other research institutes and hospitals – harnessing the strengths of the broader Parkville Precinct.

Alongside our new direction is a revitalised brand and logo – a new visual identity, one which honours our past and enables us to move forward as a modern, innovative research institute.

I am also pleased that Professor Trevor Kilpatrick has agreed to extend his Directorship to the end of 2024. He is key to the successful implementation of the Future Florey Project and will continue to build our reputation as a world leader in brain research and clinical translation.

I also wish to acknowledge the significant contribution of our previous Chair, Mr Mark Jones AM, for his dedication and commitment to The Florey over the past 25 years. Together with past chairs and boards, Mr Jones helped position the institute for the next great frontier in medical research – the brain.

On a personal note, I would like to thank the Board for their support and commitment and acknowledge the great honour of chairing The Florey, as we build on the legacy and dedication of so many at The Florey over the past six decades.

A special thank you to the staff, students and leadership team of The Florey for their unwavering commitment. Their dedication and tenacity, alongside a multitude of partners, including the Australian and Victorian governments, have enabled us to continue to challenge ourselves to be the best we can.

None of this would be possible without our donors and philanthropic partners and we are deeply grateful for their continued support.

On a final note, I would like to acknowledge the 5 million Australians living with one of the conditions we study. The Florey is fully committed to making a difference to these lives by advancing knowledge of the brain and developing new treatment options.

Thank you for your ongoing support as The Florey moves into its next exciting chapter.

Mr Martin Adams
Chair, The Florey

Acknowledgment of former Board Chair, Mr Mark Jones AM:

Former Chair, Mr Mark Jones retired from The Florey Board in July 2022, having served as Chair since 2020. Mr Jones also served as Honorary Treasurer and Deputy Chair from 2018 to 2020, as well as chairing multiple Board Committees over the years.

Mr Jones’ retirement follows 25 years of combined service on both The Florey and Brain Research Institute Boards. He played a key role in the amalgamation of these institutes in 2007, revitalising the strategic direction of the Institute and ensuring success going forward.

We acknowledge Mr Jones decades of service and thank him for his unwavering commitment to The Florey.
The Florey is the home of brain research, where remarkable minds are finding new ways to improve our health.

In this report you will see that 2022 has been an exciting year for The Florey, with significant publications, important scientific breakthroughs and major projects reaching milestones.

In 2022 the return of face-to-face interactions after extended periods of lockdown helped to accelerate our creative thinking. At the same time, we have learnt to harness the strengths of virtual collaboration which will serve to further strengthen our place in the international scientific community.

I also sense that out of The Future Florey project we have a renewed enthusiasm for camaraderie, which has helped us to redefine our strategy and purpose as a leading neuroscience and mental health oriented medical research institute.

Our collective strengths in discovery focused and clinical research enable us to bring together the very best minds to solve big picture problems. This is achieved through synergy between our teams and external collaborators – working hard to create an environment conducive to research of high impact and meaningful outcomes for the community, whilst also guaranteeing the long-term sustainability of The Florey.

To further optimise our impact, we plan to coordinate our efforts into high profile discovery themes that focus on neuroimaging, therapeutics, systems neuroscience and synaptic biology. The themes will be complimented by impact focused missions dedicated to dementia, epilepsy, and improving mental health, as well as protecting and repairing the damaged nervous system.

The year is also significant in our history as we remember the passing of The Florey’s founding director, Emeritus Professor Derek Denton AO. As one of the most eminent Australian scientists of his time, Professor Denton’s unparalleled vision for what medical research should look like in Australia provided the core principles that guide The Florey as we know it today. We are enormously proud and honoured to continue Professor Denton’s legacy of discovery on behalf of the Australian community.

I also want to thank and acknowledge our extraordinary team of over 500 talented scientists, students and professional staff. I also thank the dedicated members of our Board and Executive team, our generous donors, and many important partners, in particular the University of Melbourne, Austin Health, and Melbourne Health.

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 investment in cutting-edge neuroscience and mental health research.

Professor Trevor Kilpatrick
MBBS PhD FRACP FAHMS
Director, The Florey

A message from our Director

Thank you to our dedicated Board Members

Mr Martin Adams
– Board Chair and Chair of Nominations Committee
Prof Trevor Kilpatrick
– Director
Mr Graeme A Billings
– Honorary Treasurer

Mr Chris Blake
Prof Jane Gunn
Mr Peter Haig
Prof Mark Hargreaves
Prof Adam Horsburgh
Prof Emeritus Andrea Hull, AO
Ms Kate Joel
Mr Mark Jones, AM
(former Board Chair and Chair of Nominations Committee, ret. July 2022)
Prof Christine Kilpatrick, AO
Mr Ross Oakley, OAM
– Chair of Philanthropy Committee
Mr Stephen Spargo, AM
– Chair of Commercialisation and Investment Committees
A year in review

The Florey had an exciting and varied year; here are some of the highlights from across the institute.

January
The year begins with two PhD orations to mark the completion of postdoctoral research by Dr Xin-yi Chai and Dr Jacqueline Heighway.

February
- Florey researchers attend Australian Niemann-Pick type C disease (NPC) Gala.

March
- The family of cricket legend Shane Warne request donations be directed to The Florey at his State Memorial Service.
- Professor Trevor Kilpatrick appointed Director of The Florey, Professor Graeme Jackson appointed Clinical Director and Professor Andrew Lawrence appointed as Deputy Director.

December
- $3.5 million in funding awarded by NHMRC enables Florey researchers to embark on three projects: investigating the impact of environmental pollutants on Parkinson’s disease; the anti-inflammatory effects of vagus nerve stimulation; and the prevention of sudden unexpected death in epilepsy (SUDEP).

November
- The Florey end-of-year celebration held in person for the first time in three years.

October
- Professor Julie Bernhardt receives the 2022 Barbro B Johansson Award from the World Stroke Organisation, recognising her outstanding work in stroke recovery and improvements in stroke prevention, treatment and care.
- Melbourne Mental Health Symposium takes place at The Florey with researchers sharing insights into mental health challenges and potential solutions.
April

One in Five awards Associate Professor Jess Nithianantharajah a fellowship to develop new treatments for schizophrenia.

The Future Florey Project begins.

May

A Professorial Research Fellowship is awarded to Professor Ross Bathgate, courtesy of philanthropists Carl and Wendy Dowd, to advance research into the targeted treatment of anxiety, depression, schizophrenia and Parkinson’s disease.

The Annual Florey Student PhD Symposium takes place.

June

‘Wheel’ – an interactive installation exploring exercise as mood medicine, by Dr Emma Burrow and artist Hiromi Tango exhibits at Dark MOFO in Hobart.

Image: Rosie Hastie

August

Mr Mark Jones AM retires as Chair of The Florey Board and Mr Martin Adams is appointed Chair.

September

Professor Andrew Lawrence appointed as Vice-President of the International Society for Biomedical Research on Alcoholism.

The Florey hosts an Open Day for prospective honours, masters and PhD Students.

Victoria AAMRI showcases the Australian Stroke Clinical Registry (AuSCR), a project led by The Florey, at the Parliament of Victoria.

July

Florey scientists secure $500,000 to launch LASEREDD, a start-up focusing on developing better medicines for schizophrenia.
The future of The Florey
A new strategic direction

The Future Florey Project kicked off in March 2022, aiming to establish the next phase of scientific excellence at The Florey. Professor Michael McGuckin, Deputy Dean of the Faculty of Medicine, Dentistry and Health Sciences at The University of Melbourne and Agi Luczak of By Many brought together a project team that included business strategists, analysts and members of staff at The Florey.

The project team reported to a specially convened subcommittee of the The Florey’s Board and brought together the voices of The Florey to harness the commitment, passion and deep knowledge held by staff across the organisation. Following months of consultation and feedback, the team made key recommendations for The Florey’s strategic direction to the Board – providing a pathway for us to become a world-leading medical research institute in neuroscience and mental health.

The project team’s recommendations included investing in existing strengths, continuing to stabilise our business model and grow our commercial portfolio – taking calculated risks in new areas.

A scientific vision for our changing health needs

The vision includes a refreshed research focus on specific health missions in which The Florey is well-equipped to excel. Dementia, mental health, epilepsy and protecting and repairing the brain have long been areas of strength for The Florey and where our scientists will have the greatest impact.

These missions will be complemented by four themes, that underpin our discovery research capabilities and highlight our strengths and long-standing expertise in neurotherapeutics, neuroimaging, synaptic biology and systems neuroscience.

Our missions

Make dementia preventable and treatable
Create a better quality of life for people with mental health conditions
Find cures for people with epilepsy
Discover new ways to protect and repair the brain

Our discovery themes

Systems neuroscience: Deepening our knowledge on how the brain communicates with other vital organs in health and disease
Synaptic biology: Investigating the function and plasticity of the brain, from single molecules to neural networks
Neurotherapeutics: Investigating new drug targets and developing new treatments for neurological and psychiatric conditions
Neuroimaging: Developing cutting edge technologies to image the brain and provide insights into brain structure and function

A pathway to success

The Future Florey Project unites the collective strength of our researchers and professional staff – setting The Florey on the path to long-term success. By attracting the best talent through research fellowships, enhancing commercialisation opportunities and developing a place where diversity thrives, The Florey can fast-track discoveries at the bench into clinics globally – creating real impact.
The ultimate goal of our research is to make a meaningful difference to the lives of those affected by the brain conditions we study. By using ingenuity and visionary thinking we can make discoveries that translate into improved health outcomes.
Florey scientists have been at the forefront of the biggest breakthroughs in Alzheimer’s disease research for four decades, with their latest success coming in the form of a new treatment for the condition.

Working with pharmaceutical company Eisai, The Florey’s Professor Colin Masters AO assisted in the global clinical trial of lecanemab—a medication that recently received approval for use in the United States to treat Alzheimer’s disease.

In his role as the Australia Dementia Network’s (ADNeT) Clinical Trials Lead, Professor Masters helped to recruit participants and determine the efficacy of the drug. ADNeT’s national network of dementia experts, headed by Florey researcher Professor Chris Rowe, is committed to the prevention, treatment and better care for people living with the condition.

The global clinical trial results found that lecanemab clears a build-up of a protein known as Aβ-amyloid from the brain. This amyloid is effectively plaque in the brain, and the trial showed cognitive decline was reduced by 27% in those who received lecanemab.

The breakthrough marks decades of work by Professor Masters, given it was his research in 1985 that showed amyloid had this detrimental effect on the brain—laying the foundation for the development of lecanemab and other treatments which target this protein.

“It has been 25 years since Eisai launched a symptomatic therapy, Aricept, and now for the first time we can clearly see the way forward for true disease modification,” said Professor Masters.

“There is a strong expectation that novel antibodies like those in lecanemab will be more effective in the earliest stages of Alzheimer’s disease, particularly in the preclinical stage, before any symptoms are present.”

Professor Masters and Professor Rowe, along with their team, have already made significant advances in diagnostic strategies to help identify Alzheimer’s disease in these early stages using PET imaging, which could also aid the effectiveness of drugs like lecanemab in the future.

“While lecanemab is not a cure, it is the first time an a therapy has been able to provide real benefit to those living with Alzheimer’s disease.”
Australians are some of the highest consumers of alcohol in the world and for an estimated 1 million people, their intake is uncontrolled – shifting from recreation to addiction. Despite this high prevalence, there are few effective treatments available, and even fewer for women.

The question Florey researchers asked was why are addiction treatments less effective for women? And could the key to new treatments lie in differences between the male and female brain?

"Because of the female body composition, women take longer to metabolise alcohol, so it stays in their system longer, making them more susceptible to the detrimental effects of alcohol – including on both mental and physical health," said Dr Leigh Walker, a senior addiction researcher at The Florey.

*Despite this, addiction research in women has been overlooked for decades, with treatment options developed and tested primarily in men.

"Understanding differences in how male and female brains change after chronic alcohol consumption is critical to better address treatment options for alcohol use disorders."

Investigating these sex differences, Dr Walker’s team identified a part of the brain where hormone signalling drives alcohol consumption in only female mice.

“We are following up these studies to understand fundamental sex differences that may occur in this brain region and how we can leverage this understanding to develop more female-specific treatment options for alcohol use,” said Dr Walker.

One such treatment the team are currently investigating may reduce alcohol craving and consumption. Their findings suggest a drug, called PF-05190457, will be more effective in females for the treatment of alcohol use disorder.

“We are examining how this drug acts differently within the brains of males and females and investigating if it could have any unexpected adverse side effects, to indicate if there are unforeseen barriers to its clinical development. Our research will also help us to identify other brain chemicals that could be novel targets for treatment development,” explained Dr Walker.

“In other mental health conditions, like depression, there is a toolbox of different treatments that can be used – where different drugs work better for different people. We need to develop this same toolbox of treatment options for alcohol use disorder. It’s my hope that examining sex differences can help us get there.”
Two major projects based at The Florey marked significant milestones in 2022 – taking advances in healthcare directly to people living with some of Australia’s most common neurological conditions.

**Australian Epilepsy Project – two years in**

The Australian Epilepsy Project (AEP), a five-year research project, is focused on transforming the diagnosis and treatment of people living with epilepsy in Australia.

A network rollout of AEP hubs started in 2022 with Austin Health and Alfred Health in Victoria to enable participants access to the best diagnostic testing, whether in the clinic or at home. The roll out will continue across Australia in 2023 with February marking the first interstate hub – opening at the South Australian Health and Medical Research Institute in in Adelaide.

Currently the project is focused on democratising access to advanced diagnostic testing for epilepsy, which is not readily available across Australia. Under the current standard of care it can take on average 10 to 15 years for patients living with epilepsy to access the type of testing and diagnostics that are available as part of the AEP.

As of December 2022, more than 250 patients have been referred into the study, and the AEP has delivered more than 190 baseline reports to the participants’ neurologists. The reports not only contribute to future breakthroughs in research but are being used to inform clinical decisions for patients from day one.

The AEP receives funding from the Australian Government under the Medical Research Future Fund. It is supported by The Florey, the University of Melbourne, and other partners.

**Young Stroke Service – one year on**

The Florey’s Young Stroke Service, a collaborative $10 million project funded by the Medical Research Future Fund, is a research project providing faster, personalised clinical care and additional long-term support to young people with stroke.

The project, led by Professor Julie Bernhardt and Professor Vincent Thijs, has hit several major milestones in their first year including finalising the first phase of the digital platform integrating user and technical evaluation, and completing mapping of stroke services for the young that exist in Victoria and South Australia.

Additionally, the team developed a ‘one-stop-shop’ model to match the needs of young people who experienced stroke with relevant information and services.

The team also engaged with clinicians in preparation for rollout of the service in 2023 and partnered with the Stroke Foundation to ensure the service is co-designed from start to finish.

“We’re excited by the enthusiasm for the development of this innovative service shown by clinicians, researchers, digital developers and most importantly the stroke survivors collectively helping to build the Young Stroke Service. We’ll be open for referrals soon, and this shows the huge potential in how The Florey can drive major changes in clinical research and its application in clinical practice,” said Professors Bernhardt and Thijs.
Publications of note

Understanding the drivers of impulsive behaviour
Professor Lucy Palmer and team published *Neural basis of anticipation and premature impulsive action in the frontal cortex* in *Nature Neuroscience*. Their paper investigated premature impulsive actions such as ‘false starts’. They found the anterior lateral motor cortex plays a major role in getting the anticipated behaviour wrong. This could inform how impulsive behaviour occurs in disorders such as schizophrenia, obsessive compulsive disorder and addiction.

Pioneering stem cell research to advance the treatment of Parkinson’s disease
Professor Lachlan Thompson and Professor Clare Parish, Dr Niamh Moriarty and team published their proof-of-principle study *A combined cell and gene therapy approach for homotopic reconstruction of midbrain dopamine pathways using human pluripotent stem cells* in *Cell Stem Cell*. Their research successfully used transplanted neurons derived from stem cells to construct long-distance brain connections previously damaged in an animal model of Parkinson’s disease.

New insights into an important therapeutic target for a range of cardiovascular and neurodegenerative diseases
Associate Professor Daniel Scott and his team solved the first crystal structure of an important receptor implicated in heart failure and Alzheimer’s disease. Their paper, *Crystal structure of the α1B-adrenergic receptor reveals molecular determinants of selective ligand recognition*, published in *Nature Communications*, details how the α1B-adrenoceptor regulates key activities within the cardiovascular and nervous systems.

Identifying epigenetic contributors to epilepsy
Professor Chris Reid and an international team of researchers published *Epigenetic genes and epilepsy – emerging mechanisms and clinical applications* in *Nature Neurology*, looking at an emerging field of research in epilepsy known as ‘epigenetics’. Their review highlighted that epigenetic variations is increasingly found to be causally involved in types of epilepsy and has implications for disease mechanisms, treatments and diagnostics.

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Building effective partnerships

The Florey is a dynamic hub of researchers, clinicians, patient communities, collaborators and funders forming partnerships to find solutions to complex challenges.
A seminal moment for sepsis

The Florey is one step closer to transforming the management of sepsis in intensive care units (ICUs) in Australia and across the world.

On a mission to save lives, Florey researcher Associate Professor Yugeesh Lankadeva is leading one of The Florey’s largest research collaborations. Featuring prominent scientists and clinicians, the team is conducting major clinical trials in public hospital ICUs across Australia and is potentially on the cusp of a breakthrough in sepsis treatment.

Using a compound patented by The Florey, the team will test a pH-balanced formulation of sodium ascorbate that, in recent pre-clinical studies, has been shown to reverse sepsis-induced brain, kidney and cardiovascular dysfunction.

One in five global deaths are due to sepsis, a dysregulated immune response to infection and the leading cause of mortality in ICUs around the world. There are currently no treatments to reverse sepsis-induced multi-organ failure and death.

“The results of using sodium ascorbate in septic patients have been very promising so far,” said Associate Professor Lankadeva.

To advance the treatment, the team were awarded an Australian Government Medical Research Future Fund grant of $4.9 million. The grant will enable leading scientists from The Florey, the Doherty Institute, Monash University, Peter McCallum Cancer Centre, and WEHI (Walter and Eliza Hall Institute) to further this work over the next five years.

Clinicians from Royal Adelaide Hospital, Alice Springs Hospital, Austin Health, The Royal Melbourne Hospital, Monash Health, Royal Brisbane and Women’s Hospital, Sir Charles Gairdner Hospital, and St George’s Hospital will also collaborate to form a true interdisciplinary team.

“This funding enables us to further investigate the safety and efficacy of this treatment. It will also help us determine the optimal dose and treatment duration of sodium ascorbate that can be used by clinicians in ICUs,” explained Associate Professor Lankadeva.

“Sepsis incidence is rising every year due to our ageing population and increasing prevalence of antibiotic resistance in our community.”

“We are building an enduring national collaboration between scientists and clinicians to enact long-term transformative health care changes and inform future research into personalised medicine for people diagnosed with sepsis.”
Affecting around 1% of the population, epilepsy is the most common neurological condition in Australia. This includes one in 2000 babies born with severe childhood epilepsy – babies who live with recurrent seizures and who do not reach developmental milestones as the result of mutations in just a single gene.

Investigating these genetic changes is The Florey’s Associate Professor Snezana Maljevic – her team’s goal is to develop new disease models to find effective treatments for the condition.

At the core of their work is a partnership with US biopharmaceutical company Praxis, co-founded by Florey colleague and fellow epilepsy researcher Professor Steven Petrou.

To better understand how the disease behaves in childhood genetic epilepsy, the team has been investigating pre-clinical mouse and patient-derived stem cell models. Of particular interest are brain ‘organoid’ models that can replicate neurodevelopmental processes.

These models have the potential to offer valuable insights into how single gene mutations lead to seizures and the effects they have on the brains of children and their development in very early life.

Associate Professor Maljevic said that by using these models they can see how potential treatments may or may not work. One of the treatments currently being investigated at The Florey is antisense oligonucleotide therapies.

“These therapies use small, single-stranded synthetic pieces of DNA that can specifically bind to mRNA, which encodes the gene of interest, to either block its ability to make a protein or influence the amount of protein produced in other ways,” explained Associate Professor Maljevic.

“They can be effective therapy for genetic epilepsy as they can normalise the amount of protein produced by a gene carrying an epilepsy causing mutation.”

Associate Professor Maljevic said that the partnership with Praxis has enabled her team to undertake an amount of work that would normally require several years, in just the last year alone.

“It is fantastic to see the excitement of everyone on the team as we have a real opportunity to positively impact lives of children living with epilepsy.”
An unwavering focus on the science is important in all medical research, but equally as important is meeting people living with the condition being studied, learning about individual experiences and sharing scientific knowledge.

Pairing lived experience with research has proven to be a valuable collaborative approach for The Florey's Professor Tony Hannan and Huntington's Victoria. Huntington's Victoria supports and assists people impacted by Huntington's disease (HD) and for 50 years has increased awareness and understanding of the condition, as well as the impact it has on individuals, families and communities.

HD is a genetically inherited condition where a person's physical, cognitive, and emotional capacity progressively deteriorate. Life expectancy after symptoms begin is estimated to be approximately 10-25 years.

Professor Hannan hopes further research will establish new treatments for Huntington's and related neurodegenerative diseases, which are currently incurable.

"It has been my pleasure and privilege to interact with, and support, the Huntington's Victoria community over the past two decades as this is a devastating disease which is under-recognised and under-funded," said Professor Hannan.

Tammy Gardner, CEO of Huntington's Victoria, stated that Professor Hannan is well-known and respected by the Huntington's disease community.

“The HD community know that they can depend on Professor Hannan's invaluable knowledge of the latest research discoveries, including those from his Florey team," said Ms Gardner.

“In particular, the HD community looks forward to Professor Hannan's updates at the annual Huntington's Victoria Community Day Conference held at The Florey. It was at such a forum that Professor Hannan was able to reveal his team's world-first discovery that correcting imbalances in gut bacteria could play a part in treating the disease."

The team’s investigations have led to a further discovery, finding that a faecal microbiota transplant can improve cognitive deficits seen in a preclinical model of Huntington's disease.

“Working with Professor Hannan and his team at The Florey helps shine an invaluable light on an often misunderstood rare genetic health condition that has devastating impacts on individuals and their families who battle on valiantly through extraordinary challenges,” added Ms Gardner.
Accelerated drug discovery for schizophrenia

In 2022, scientists from The Florey secured $500,000 in funding to enhance their capacity to undertake next-generation drug discovery through a new biotech spin-out LASEREDD Therapeutics.

The funding from CUREator – a biotech incubator backed by the Australian Government’s Medical Research Future Fund and run by Brandon BioCatalyst – launched the spin-out to identify and develop new and improved medicines for schizophrenia.

Approximately 1% of the population experiences schizophrenia or related mental health conditions. These people are underserved, with doctors having only a limited repertoire of anti-psychotics to improve certain aspects of these diseases, often with debilitating side effects.

There is a major need for treatments with improved efficacy and fewer side effects. Launched from a project led by Associate Professor Daniel Scott, Dr Christopher Draper-Joyce and Professor Ross Bathgate, LASEREDD Therapeutics hopes to meet this need.

The spin-out uses a proprietary new technology platform to facilitate more targeted drug discovery against a class of cell surface proteins known as G-protein-coupled receptors (GPCRs). Associate Professor Scott says that while 30% of approved prescription medicines act via binding to one or more of the over 500 different GPCRs in our body, developing safe and effective drugs that act against specific GPCRs is a major challenge.

“With our next-generation platform technology, we aim to overcome significant barriers that have hindered GPCR drug discovery – enabling the next generation of medicines with improved therapeutic efficacy whilst reducing side-effect liability, improving outcomes for patients with unmet needs,” said Associate Professor Scott.

“The funding from CUREator will enable us to accelerate our antipsychotic platform validation study, grow our team of scientists, and demonstrate the huge promise of our technology for developing new medicines across a range of diseases.

“GPCRs are involved in nearly every physiological process in our bodies, they are very important molecules in a huge range of diseases and conditions – and that’s why I’ve spent the past two decades developing new methods to study them,” added Associate Professor Scott.
Embracing our remarkable talent

The Florey is a place that fosters excellence, where a diverse group of remarkably talented people are drawn together by the shared purpose of advancing brain research.
An estimated 400,000 Australians live with Alzheimer’s disease – a figure expected to double in the next 30 years. Despite this, it is one of the most difficult neurological conditions to treat. While there are new treatments on the horizon, one barrier to success remains – how to get a drug across the blood-brain barrier.

Dr Rebecca Nisbet is one of The Florey’s researchers working to address this challenge, investigating new drug delivery strategies to cross the blood-brain barrier.

“The blood-brain barrier is designed to protect the brain from any infections or germs in the blood – and it’s very good at this. However, it also prevents 99 per cent of drugs from entering the brain,” explained Dr Nisbet.

She believes that the blood-brain barrier is the reason so many promising therapies for Alzheimer’s disease have failed in clinical trials.

One of the strategies her team are investigating is using messenger RNA (mRNA) to package up the genetic information of a treatment into biological and synthetic drug delivery vehicles that can cross the blood-brain barrier. Once delivered, brain cells can read this information to produce the drug itself.

“mRNA is such a small molecule with the advantage that it can easily be packaged within delivery vehicles to pass through the blood-brain barrier. The mRNA acts like an instruction booklet, so once inside brain cells have all the information needed to make the drug themselves – essentially allowing the treatment to bypass the blood-brain barrier,” said Dr Nisbet.

Her team hope to use this technology in combination with next generation antibody treatments for Alzheimer’s disease – which they are also developing.

“What’s exciting about this research is that the strategies my team develop aren’t just limited to Alzheimer’s disease; they can be applied to other neurological conditions as well,” said Dr Nisbet.

“It is our hope that this research will progress to clinical trials in the near future – overcoming one of the biggest challenges for drug delivery to the brain and allowing us to finally reduce the impact of this horrible condition.”
Knowledge to feed the brain

Neuroscience Seminar Series

Bringing together speakers from a wide range of research areas, The Florey’s regular neuroscience seminars promote excellence in brain research through the exchange of ideas, establishing new collaborations and augmenting partnerships already in place.

The seminars attract an audience of researchers, staff and students at The Florey as well as partner organisations – and they have been integral to increasing in-person participation and collaboration as people returned to the office.

Continuing the legacy of these seminars 10 years on has been vital for researchers of all career stages. New in 2022 was a pre-seminar lunch, aptly named ‘Brain Food’, before each seminar to further extend conversation, collaboration and engagement in the scientific community.

2022 highlights

Providing an opportunity for remarkable talent to showcase their areas of expertise to our people at The Florey, the seminar series had many incredible speakers in 2022.

International speakers

All the way from New York, beaming in virtually, Professor Jonathan Javitch enthralled staff and students virtually with his elegant research on the molecular mechanisms that underpin the activity of glutamate receptors and how they might link to psychiatric conditions.

Currently at Columbia University, Professor Javitch is also Director of the Lieber Center for Schizophrenia Research and Treatment, and Chief of the Division of Molecular Therapeutics at the New York State Psychiatric Institute.

Interstate speakers

Dr Tara Walker joined us from the Queensland Brain Institute, spending the day at our campus and interacting with many of our groups. This visit culminated in her seminar describing the effects of exercise on neurogenesis and cognitive function.

Dr Walker heads a group investigating the systemic regulation of neurogenesis in the adult hippocampus at the Queensland Brain Institute.

Turbo Talks

Throughout the seminar series the Florey Postdoctoral Association (FPA) host Turbo Talks – where three smaller talks by early career scientists make up the seminar of that day. The talks give our postdoctoral researchers a chance to showcase their research to peers, obtain feedback and facilitate new institute collaborations.

| Number of speakers in 2022 | 27 |
| Number of institutions represented | 17 |
| FPA Turbo Talks given | 3 |
Supporting staff through our associations

The Florey’s staff and student networks have been an integral part of the Institute for many years, providing support and bringing colleagues together in a purposeful way. During 2022, the role of committees and associations was more important than ever. Finding new and engaging ways to support colleagues, providing professional development opportunities and fostering a culture of friendship and encouragement all contributed to The Florey being a great place to be.

SOFI Committee

The Students of The Florey Institute (SOFI) is a student organisation affiliated with and funded by The Florey, run by current students elected each year. SOFI’s goal is to support and empower our exceptional students through academic, professional, social and networking events.

“We ran over 130 events and initiatives in 2022, including workshops and careers panels, practice presentations, international food festivals, a staff vs. students sporting event and a student publications awards night,” said Elena Regele Blasco, SOFI Vice-President 2022.

2022 Committee Members

Ulysse Thivisol, Elena Regele Blasco, Katie Lewis, Montanna Waters, Tyra Fraser, Chau Tran, Rachel Peiris, Shivani Vaidya, Georgia Eleftheriou, Eva Guerrero-Hreins, Jessica Dlima, James Carroll, Kaida Wu, Juulke Castelijn and Eliza Moore.

EQiS Committee

The Florey Equality in Science (EQiS) Committee acts as an agent for positive change at the Florey, informing and promoting policies and practices to achieve equality, diversity and inclusion.

2022 highlights included two events to raise awareness of equity, diversity, and inclusion needs. The committee organised The Florey 2022 International Women’s Day Event with keynote speaker Donna Edwards, CEO of SHOUTOUT (a talent recognition platform), who gave a seminar entitled ‘Inclusive leadership - better for all of us.’
A cultural diversity lunch saw colleagues bring a traditional dish from their country of origin as a way of recognising and celebrating the richness of The Florey's multi-cultural workforce.

2022 Committee Members

FPA Committee
The Florey Post-Doctoral Association (FPA) represents all the post-doctoral scientists of The Florey and organises social and career development events throughout the year.

In 2022, Tuesday Turbo Talks was implemented as a regular part of the Neuroscience Seminar Series, which gave Florey postdoctoral researchers the opportunity to share their expertise and opportunities for collaboration to an institute-wide audience.

In September, the FPA symposium returned in-person, featuring local and international guest speakers as well as Florey early career researchers. Early to mid career researcher workshops were hosted in collaboration with Florey staff, such as the Commercialisation for Translation and Grant Writing Workshops. The FPA committee also reinstated the Career Development Awards, aiding in the upskilling and CV building of early-career researchers.

2022 Committee Members
Riley Cridge, Sarrabeth Stone, Bradley Hoare, Yijun (Nicholas) Pan, Roberta Goncalves Anversa, Ming Shiuan Soh, Natasha Pracejus, Marius Rosier, Maryam Banaei, Juan Pablo and Saa Arancibia.

FloRA Committee
The Florey research assistant network (FloRA) was founded with the aim to provide research assistants with a community for support and a platform for social networking and career development.

In 2022 FloRA held an inaugural inter-Institute Research Assistant Conference. It sparked an empowering conversation regarding career progression between the senior and junior staff who were present.

2022 Committee Members
Chaseley McKenzie, Celine Dubois, Erlina Mohamed Syazwan, Katherine Lim, Daria Kornienko and Emily-Rose Vaughan-Fowler.
Meet our people

The Florey’s success is driven by our talented people from all walks of life, dedicated to improving the lives of people through brain and mental health research.

We asked a few members of staff why they work at The Florey.

Professor Anne-Louise Ponsonby
Head, Neuroepidemiology Group
Our work is vital, forward-looking and relevant. It provides information on causes of diseases that are becoming more common over time, including multiple sclerosis, autism spectrum disorder and attention deficit disorder. What excites me about working at The Florey is leading a group of committed people striving to prevent important diseases.

Emily Lamb
Training Officer and Animal Technician
My work is challenging, inspiring and rewarding. I support research by offering technical services, training programs and high-quality animal welfare to ensure research at The Florey leads to the best possible outcomes for society. Contributing to the greater good is what drives me to support neuroscientific research.

Dr Alan Yu
Head, Neuroinflammation Group
My group’s work is dynamic, collaborative and inspiring. We aspire to map the cause(s) of neurodegeneration through the lens of immunology. We are a cohesive bunch and love the journey of discovery. The Florey offers world-class neuroscience research training as well as opportunities to develop diverse career skills.
Professor Christopher Rowe  
Director, Australia Dementia Network  
I mix clinical practice with research and team leadership to improve the diagnosis and treatment of dementia. Working at The Florey gives me access to clever minds and advanced technology. My current focus is getting new blood tests for Alzheimer’s disease into clinical practice to lower the risks and improve the benefits of a recently identified amyloid plaque clearing antibody treatment.

Jeremy Stanek  
Business Systems Analyst, IT  
I love working at The Florey because of the positive impact researchers have on people’s lives. I work in the IT space to support our researchers in making the most of the technology resources available to them. Working with scientists in the different labs at The Florey is also a rewarding part of my role.

Professor David Finkelstein  
Head, Parkinson’s Disease Group  
As a self-proclaimed science nerd, I am captivated by the complexities of both scientific knowledge and the challenge of Parkinson’s. I am driven to share my passion for science with others and believe that knowledge is a crucial component in enhancing our community. My objective is to actively engage the community in the pursuit of discovering new and effective therapies for Parkinson’s.
Celebrating PhD orations

PhD orations have been an important part of students’ academic journeys at The Florey for decades. These orations are completion seminars given to the scientific and wider community by Florey students, highlighting their research.

Congratulations to all Florey students who completed their PhD research throughout 2022, including the following:

**Xin-yi Chai**
Area of research: Investigation of nerve pathways mediating colorectal dysfunction in a Parkinson’s disease model.

**Dr Jacqui Heighway**
Area of research: Investigating SCN2A dysfunction in later-onset epileptic encephalopathy and autism.

**Dr Sydney Juan**
Area of research: Investigating the potential role of the tau protein and metal ions in repetitive mild traumatic brain injury.

**Dr Natasha Krishnadas**
Area of research: Amyloid and tau in the development of mixed 3-repeat/4-repeat tauopathies – a PET imaging study.

**Dr Sevannah Ellis**
Area of research: The impact of advancing age and intraocular pressure elevation on retinal ganglion cell synaptic connectivity in an acute model of glaucoma.

**Yafit Kushner**
Area of research: Disease mechanisms of early onset epileptic encephalopathy caused by a de novo KCNQ2 variant.

**Michelle Shannon**
Area of research: Exploring the physical design of hospital interiors for people with stroke.

**Linda Nguyen**
Area of research: Unraveling the role of microglial MERTK in myelination in multiple sclerosis.

**Farheen Farzana**
Area of research: Investigating mechanisms underlying mutant huntingtin toxicity by spatially mapping brain metabolism in a mouse model of Huntington’s disease.

**Lisa Williams**
Area of research: Towards biologics for vasopressin family receptors.

**Dr Lilian Braighi Carvalho**
Area of research: Cerebral hemodynamics and upright positions in acute ischaemic stroke.

**Kevin Law**
Area of research: Advancing human pluripotent stem cell-derived neural transplants for brain repair.

**Annai Charlton**
Area of research: The effects of chronic alcohol consumption on behaviour and pathology, and potential interventions.
Florey Fellowships

Providing security and support for leading researchers is vital to promoting scientific excellence and a culture of success. The need for sustainability in scientific funding is widely acknowledged across the medical research sector and this was heard loud and clear through the Future Florey Project.

As a direct consequence, in November 2022, The Florey announced the successful applicants for four Florey Fellowship positions.

These Florey Fellowships offer recipients salary support and encourage ‘big idea’ science with the potential to have meaningful and enduring outcomes.

Professor Chris Reid has been awarded a five-year Senior Research Fellowship to continue to drive pre-clinical programs that will create and validate therapeutic strategies targeting pathogenic ion channels implicated in epilepsy and other neurological disorders.

A further three philanthropic Fellowships of three years were awarded to Dr Rebecca Nisbet, Dr Lindsea Booth and Dr Fazel Shabanpoor – funded by a generous donation from Allan Myers AC KC and Maria Myers AC.

Dr Nisbet is working on developing next-generation antibody therapeutics for the treatment of Alzheimer’s disease and other neurodegenerative diseases.

Dr Booth’s research uses state-of-art genetic engineering techniques to selectively modify how the brain communicates with the heart and kidneys in disease.

Dr Shabanpoor is researching the development of brain-penetrating peptides and antisense oligonucleotides as therapeutics for treatment of neurological diseases.

These Fellowships are a testament to the outstanding achievements of our individuals in their respective fields of expertise and The Florey look forward to seeing their work continue to flourish in the coming years.

L–R Mr Allan Myers, Prof Trevor Kilpatrick, Dr Rebecca Nisbet and Dr Lindsea Booth
Professor Derek Ashworth Denton AC, The Florey’s founding director, was one of the most eminent Australian scientists of his time.

He was a revolutionary leader in medical research and a dedicated husband to his late wife Dame Margaret Scott and father to his two sons.

Professor Denton, or ‘Dick’ as he was known, was born in Launceston, Tasmania on 27 May 1924 and embarked on a career as a research physiologist. He was internationally acclaimed for his research into the instinctive behaviour of the human body including the response to thirst and hunger, and how we control chemical balances through genetically programmed brain mechanisms.

His numerous ground-breaking discoveries, in particular those related to salt and water metabolism, have saved countless lives through the real-time assessment of body chemistry balance post-operatively and in trauma cases. These techniques later evolved into what is now known as intensive care.

Professor Denton was recognised as a global authority on the bodily regulation of salt and water but there remained fierce controversies on the role of excess salt intake on human health and its potential to cause high blood pressure. His research had a major influence on our understanding of these interactions, while his advocacy led to major important outcomes; the cessation of added salt to certain foods, persuading Heinz in Australia to stop adding salt to baby food.

In his later years, Professor Denton embraced new technologies such as magnetic resonance imaging to further his understanding of how the brain regulated instinctive behaviours and posited as to how these behaviours might form the basis for conscious thought from an evolutionary perspective. He fostered the careers of several generations of neuroscientists many of whom remain seminal to the life of The Florey today.

Ultimately, he was driven by curiosity – a big-picture researcher with an enduring love of both science and the arts.

Professor Denton’s unparalleled vision for what medical research should look like in Australia took enormous courage, dedication and insight. We are enormously proud and honoured to continue his legacy of discovery through the impactful work of The Florey to this day.
Major achievements

1974
Foreign Medical Member of the Royal Swedish Academy of Sciences

1960
Brings together major philanthropists to establish the Howard Florey Institute of Experimental Physiology and Medicine – now known as ‘The Florey’

1979
Fellow of the Australian Academy of Sciences

1986
Honorary Foreign Member at the American Academy of Arts and Sciences

1988
Honorary Fellow of the Royal College of Physicians in London

1995
Member of the National Academy of Science (USA)

2003
Fellow of the French Academy of Sciences

1999
Fellow of the Royal Society

2004
Fellow of Trinity College, University of Melbourne – the highest honour the College can bestow – for his outstanding contribution to science

2005
Companion of the Order of Australia for his leadership in medical research
Like many bequestors, Alma Ross wants her legacy gift to enable great medical research beyond her lifetime. She has a vision of supporting both the researchers investigating neurological conditions and the people who experience them.

It is generous gifts like Alma’s that encourage and support The Florey to make a meaningful impact in medical research – to improve the lives of people living with brain and mental health conditions.

Alma is no stranger to medicine and health sciences. She led an exciting career in prominent private and public organisations including medical administration at the Royal Children’s Hospital, scientific operations at The Australian College of Paediatrics, and medical science publications for Wiley Journals.

With her breadth of experience in medicine and science, her affinity with neuroscience was further strengthened during her work with Florey Governor and eminent neuroscientist, Sir Edward Byrne AC in the late 1990s.

It was during this time that she learnt about The Florey’s research excellence in neuroscience and mental health. This was also the stage in her life when she was reviewing her Will – thinking about how to empower the next generation and leave a meaningful legacy.

Alma knew that a gift in her Will to The Florey could help provide the necessary financial resources to keep researchers focused on their investigations, easing the pressure that comes with applying for competitive grant applications, while offering them support for research equipment costs.

Having had every opportunity to see the work being done by medical researchers for most of her working life, it has always been of great concern to Alma that highly qualified scientists have limited job security and must rely on grants to fund their work – writing many she considers unnecessarily time-consuming, eating into valuable research hours.

“It means that we are in danger of losing brilliant scientific minds overseas, something we cannot afford to do. Knowing that I can contribute and help the brilliant researchers at The Florey through my bequest is important to me at this stage in my life,” said Alma.

Alma told The Florey that if she can shape one outcome through medical research, she hopes that it is to help our scientists find a way to manage dementia and wants a cure to be found. The reason for this is that Alma, like many Australians, knows far too many people living with this condition, and has seen dementia’s far-reaching effects on numerous families and friends.

Today, Alma is a proud member of The Florey Society, a group of people who have committed to leave a gift in their Will to The Florey and she encourages other like-minded people to do the same.
I wish to extend my gratitude to you and all our generous donors for your continued support of The Florey. Many of you are long-time loyal supporters of the institute and have been engaging with us for many years. Your continued generosity goes directly to helping us make discoveries that diagnose, treat and prevent neurological and mental health conditions.

In particular, I would like to thank Allan Myers AC KC and Maria Myers AC, whose generous donation in 2022 was used to fund three Philanthropic Fellowships for three years.

An additional fellowship courtesy of philanthropists and Principal Benefactors of The Florey, Carl Dowd AM and Wendy Dowd AM was also awarded in 2022 and will advance research into new treatments for a variety of conditions.

Their support ensures our leading researchers have security outside of competitive grants. These exceptional scientists are able to think outside the box in creating scientific solutions to the world’s biggest health problems. With these fellowships, researchers have the freedom to follow up ideas and innovations as they emerge, driving our ability to chase discoveries and improve lives.

Another major milestone for us this year was receiving donations in memory of legendary cricketer Shane Warne. It was thanks to a kind request from the Warne family – that people make donations to The Florey’s impactful research in lieu of sending flowers during his State Memorial Service, which led to the establishment of a memorial fund to support our ongoing brain research.

There is no doubt that the changing health needs of our population make investment in medical research more important than ever. Looking ahead, we’ll be forging close connections with our supporters helps us to remain top of mind and build a pipeline of major funding for brain research.

As we continue into 2023, we remain committed to collaborating closely with our scientists, ensuring donations from supporters like you are directed to the greatest need – working to advance treatments in a range of brain and mental health conditions.

On behalf of all researchers and students at The Florey we thank you again for your support and are grateful for the generous investment from all our supporters throughout the year.
Acknowledgement of our donors

Our scientists continue their pursuit to advance brain research.

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 diseases of the brain and mind that we study.

We are grateful to all our supporters including those below and those who choose to remain anonymous, joining us in our belief that an investment in science is hope for the future.

Founding benefactors
Kenneth Myer
Ian Potter

Florey champions
Charles Allen
Charles Goode
Mark Jones
Harold Mitchell
Bailie Myer
Kenneth Myer
Marty Myer

Florey Future Fund

Principal Benefactors
Carl and Wendy Dowd
Estate of Mary Loughton
Harold Mitchell

Fellow
Primrose Potter

Associates
Lyndsay Cattonmore
Estate of Majorie Talan and Akos Talan
The A.N. and B.O. Williams Foundation

Brains Trust
Charles Allen / Graeme and Letitia Billings / Angelo Bladen / Jack and Meg Bowen / Peter and Jan Clark / Nigel Gaunt / Gaye and John Gaylard / Wayne and Suzanne Gill / Ai-Gul and Andrew Guild / Ronda Hall / Linda Herd / Kate and Warren Joel / Hugh Kelso / Peter Lumley / Lana Moran / Peter Nixon / North Projects / Ross and Christine Oakley / Tony and Helen Pyman / Michelle Quigley / Caroline Robertson / Nicola Rollerson (APS Foundation) / Graeme Samuel / Gary and Glenise Travaglia

Major donors

Gifts in Wills – The Florey Society

Estates and bequests
Darbyshire Family in memory of Caitlin / Margaret Friend Trust / Estate of Violet Elaine Hasting / Estate of Denny McCullough / Estate of Graham Douglas Rogers / Estate of Grahame Max Smith / Estate of Sydney Ronald Strauch / Estate of Daniel Veysey

Trusts and foundations
Alzheimer’s Association (US) / Australian NPC Disease Foundation / Bethlem Griffiths Research Foundation / Brain Foundation / Weary Dunlop Foundation / Equity Trustees / Fight Parkinson’s / FightMND / Ticker of Hope Foundation / Frick Foundation / Anne Marie and Arturo Gandolfo-Fumagalli Foundation / Patricia Madigan Charitable Trust / Ernest and Porska Major Foundation / MND Research Australia / MS Australia / Tom and Ruth O’Dea Fund – managed by Lord Mayor’s Charitable Foundation / One in Five / Percy Baxter Charitable Trust / Perpetual Trustees – Perpetual Impact Philanthropy / The CASS Foundation / The Heart Foundation / The Ian Potter Foundation / The Lionel and Yvonne Spencer Trust / Trish MS Research Foundation / Estate Late Olga Mabel Woolger

Supporting research excellence
Collier Family in memory of John / Darbyshire Family in memory of Caitlin / Estate of Wally and Jean Jackson / John Milne / The Harold Mitchell Foundation / Allan and Maria Myers

Gifts in honour
## Financial Snapshot 2022

### Income 2022

<table>
<thead>
<tr>
<th>Source</th>
<th>$M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>48.9</td>
</tr>
<tr>
<td>Commercial</td>
<td>22.0</td>
</tr>
<tr>
<td>Philanthropy</td>
<td>6.1</td>
</tr>
<tr>
<td>Other</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81.2</strong></td>
</tr>
</tbody>
</table>

### Expenditure

<table>
<thead>
<tr>
<th>Category</th>
<th>$M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and wages</td>
<td>(49.7)</td>
</tr>
<tr>
<td>Direct &amp; Indirect research expenditure</td>
<td>(26.9)</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td><strong>(76.6)</strong></td>
</tr>
<tr>
<td>Operating Surplus</td>
<td>4.6</td>
</tr>
<tr>
<td>Depreciation &amp; amortisation</td>
<td>(4.2)</td>
</tr>
<tr>
<td>Other expenses (including unrealised losses)</td>
<td>(2.1)</td>
</tr>
<tr>
<td><strong>Net Deficit</strong></td>
<td><strong>(1.7)</strong></td>
</tr>
</tbody>
</table>

### Financial Position

<table>
<thead>
<tr>
<th>Category</th>
<th>$M</th>
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</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>110.4</td>
</tr>
<tr>
<td>Non-current assets</td>
<td>63.1</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td><strong>173.5</strong></td>
</tr>
<tr>
<td>Liabilities</td>
<td>(51.8)</td>
</tr>
<tr>
<td><strong>Net assets</strong></td>
<td><strong>121.8</strong></td>
</tr>
</tbody>
</table>

### Review of Operations

For the year ended 31 December 2022, Total Revenues from Ordinary Activities was $81.2m. The entity recorded an Operating Surplus of $4.6m. As a consequence of world-wide economic factors, the overall value of our investments fell in 2022 and resulted in unrealised losses of $2.1m. Following this, the entity recorded a Net deficit for 2022 of $1.7m.
### Investments Dec 2022

<table>
<thead>
<tr>
<th>Source</th>
<th>Value (M)</th>
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</thead>
<tbody>
<tr>
<td>Available for-sale Investments</td>
<td>36.3</td>
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<tr>
<td>Term deposits</td>
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</tr>
<tr>
<td>Cash-at-bank</td>
<td>8.5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>99.8</strong></td>
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</table>

### Sources of income 2022

<table>
<thead>
<tr>
<th>Source</th>
<th>Value (M)</th>
</tr>
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<tbody>
<tr>
<td>Government</td>
<td>38.7</td>
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<tr>
<td>Commercial</td>
<td>22.0</td>
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<tr>
<td>Non-Govt Funding Bodies</td>
<td>10.2</td>
</tr>
<tr>
<td>Philanthropy</td>
<td>6.1</td>
</tr>
<tr>
<td>Investment</td>
<td>1.7</td>
</tr>
<tr>
<td>Other</td>
<td>(2.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81.2</strong></td>
</tr>
</tbody>
</table>
Our cover graphic showcases a microscopic image produced by Florey student, Jenny Ngo. The image captures the effects of aging on autophagy and won the 2022 scientific prize in Neuropix, The Florey's annual microscopy competition.