

# Brain Matters

News from the Florey Institute of Neuroscience and Mental Health



## WORLD-FIRST CLINICAL TRIAL

COMMENCED IN ALCOHOL USE DISORDER

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## Director's Report

**W**e are in the middle of a once in a generation opportunity to improve Victoria's mental health system. In recognition of the importance of this, we've devoted most of this issue of *Brain Matters* to our research into mental health.

Earlier this year, the State Government initiated a Royal Commission into Victoria's mental health system seeking clear and ambitious goals which will enable people to experience their best mental health both now and in the future.

The Florey has a long history of research into ways we can prevent, diagnose and treat mental illnesses. We have exceptional scientists hard at work focusing on depression, anxiety, schizophrenia, bipolar disorder, addiction and neurodegenerative disorders which affect cognition and mood.

We know that we can make a transformative difference through research. We also know that doing this doesn't happen overnight. Our feature story of this issue on Professor Andy Lawrence's 15 year journey to make a difference for people struggling with alcohol abuse is a great example of the impact we can make with time, tenacity and the wonderful support of donors like you.

In this issue we also highlight Professor Brian Dean's recognition by the international scientific community for his ground-breaking work in schizophrenia and bipolar disorder. You'll also read about how our PhD students engage with the community about mental health through our collaboration with the Dax Centre, a gallery which showcases art made by people with an experience of mental illness.

Each of these stories and more helped to inform the Florey's report which was provided to the Royal Commission into mental health. As part of our commitment to ensuring a thoughtful and well-rounded mental health research workforce of the future, three of our early-mid career researchers added their perspectives, ideas and experiences to the report too.

On behalf of all of us at the Florey who are working to improve the lives of people living with mental health challenges and those of us who have also been personally affected, I'd like to extend our thanks to the Victorian Government, the Commissioners and especially the 4,500 members of the community who have shown leadership and courage in detailing their experiences of our mental health system.

As for the Florey's involvement, I can't put it better than Dr Leigh Walker, an early career researcher involved in drafting our report to the Royal Commission when she said, "I know my research, and that of my peers at the Florey, is playing a critical role in the mental health system".

Thank you for your continuing support of our work.

**Professor Steven Petrou PhD FAHMS**

Director, Florey Institute of Neuroscience and Mental Health

# Out and about

- 1 Victorian Treasurer and Minister for Economic Development Mr Tim Pallas MP was our host for a Friends of Florey at State Parliament event. We showcased the Florey's research, with over 35 members of Parliament attending.
- 2 Philanthropist Carl Dowd spoke passionately to members of Parliament about the importance of the Florey's research at our State Parliament event.
- 3 Florey early career researchers attended a reception at Government House which recognised organisations and people involved in the field of overcoming drug and alcohol addiction.
- 4 The Florey received national media coverage for results of its PISCES study, showing that exercise can protect the brain soon after a stroke.



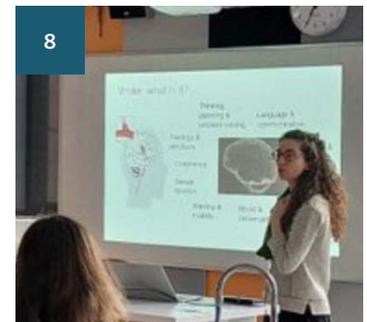
**I don't know where I would be without all of their wonderful work.**



*Amanda Kelly,  
Stroke survivor and participant in the  
Florey's exercise study.*

- 5 (L - R) Dr Laura Bird, Dr Emilio Werden, study participant Amanda Kelly, Dr Stanley Hung, Dr Rosalind Hutchings, Suzanne McKenzie from the Heart Foundation.
- 6 Assoc. Prof Lachlan Thompson, Head of the Florey's neurogenesis and neural transplantation laboratory, featured on Ch9 News speaking about the wonderful support received for Motor Neurone Disease research from FightMND. Florey researchers received three grants to address important gaps in MND treatments using frontier science.
- 7 Recruitment for the scientists of tomorrow is well underway, with our student Open Day receiving a great turnout.
- 8 Our researchers visited several schools during National Science week to showcase the work of the Florey to staff and students.





## World-first clinical trial commenced in alcohol use disorder



(L-R): Dr. Erin Campbell and Professor Andrew Lawrence.

**A**ccording to Florey researchers, a therapy currently used to treat insomnia may also be effective in preventing alcohol intake and relapse in alcohol use disorder.

A world-first clinical study commenced between the Florey and St Vincent's Hospital in Melbourne, is trialling the treatment of Belsomra (Suvorexant) in 128 participants with co-occurring insomnia and alcohol use disorder.

"Over 155,000 Australians are hospitalised each year from alcohol use disorder," said Professor Andrew Lawrence, Head of the Florey's Mental Health Research. "Yet despite the significant social and economic burden of this disease, no new treatments have been approved in Australia in over two decades."

The Florey research team, including Professor Lawrence and Dr Erin Campbell, have been studying the brain mechanisms underlying alcohol use disorder for over 15 years.

Professor Lawrence was the first in the world to publish evidence on the role of a peptide system in the brain – known as the orexin system – in driving relapse to seek and consume alcohol.

"When it comes to research, it's important to be in it for the long game" said Lawrence. "It has taken 15 years to get from discovery to this trial, which we hope will have a dramatic impact for people living with alcohol use disorder."

The team understand that Belsomra, a medicine currently approved in Australia for sleep disorders, could be repurposed to treat both alcohol use disorder and co-occurring sleep disorder in an integrative approach.



**When it comes to research, it's important to be in it for the long game. It has taken 15 years to get from discovery to this trial, which we believe will have a dramatic impact for people living with alcohol use disorder.**



Professor Andrew Lawrence

"The orexin system demonstrates just how complicated addiction can be. We know that the chronic intake of alcohol greatly disrupts sleep and wake patterns which, in turn, can drive the brain to further seek and consume alcohol," said Lawrence.

Belsomra is understood to block the binding of orexin in parts of the brain involved in addiction. The medication also targets the amygdala, a brain region associated with mood disorders, including depression and anxiety.

The study will be examining sleep measures in trial participants, as well as looking at alcohol withdrawal symptoms and ongoing alcohol use.

In the double blinded study, participants will receive either Belsomra or placebo treatment daily for 7-10 days in hospital before continuing treatment for up to six months with regular follow up.

The success of the study could see the medication trialled in larger populations and other forms of substance abuse. 



Professor Andrew Lawrence and Dr. Erin Campbell.

## Florey study paves the way for treating mood disorders



**P**rofessor Brian Dean has been recognised twice already this year for his research excellence, winning the 2019 Schizophrenia International Research Society's Outstanding Basic Research Scientist Award and The Inaugural Lundbeck Outstanding Basic Scientist Award from the Asian College of Neuropsychopharmacology. In a few months' time, Brian will also be presented The Isaac Schweitzer award from Biological Psychiatry Australia.

His research investigates the role that metals found in the brain may have in mood disorders. This could potentially provide a new avenue for treatment for people living with major depression and bipolar disorder.

Mood disorders have a major impact on society, affecting 17% of Australians each year. Brian and his team in the molecular psychiatry laboratory at The Florey, have been looking at the role cortical biometals play in mood disorders, specifically major depression and bipolar disorder.

"Metals play an essential role in the human body by assisting to regulate cellular activities and have an important role in the

functioning of the central nervous system," said Brian.

Brian and his colleagues undertook an explorative study, the first of its kind, seeking to uncover the role of small molecules in mood disorders.

The study looked at the presence of cortical metals in the brain of patients with mood disorders. Metal levels were measured in different regions of the cortex in post-mortem central nervous system tissue. The regions chosen are those commonly affected in bipolar and major depressive disorders. The tissue of patients with bipolar disorder and patients with major depressive disorders were compared with controls and differences were noted in four metals between those affected and the control groups. This discovery is significant as it may open up new avenues for the treatment of these disorders.

"Mood disorders have a profound effect on the lives of so many. This is why it's so important to continue our research into these illnesses," said Brian. 

## The Florey and The Dax Centre: Hand-in-hand



**I**f you haven't visited The Dax Centre, located alongside the Florey's Parkville campus, it's worth a look. While the Florey's labs upstairs are bustling with people making scientific discoveries, The Dax Centre exhibits artwork made by people with experiences of various mental health issues showcasing a more intimate side of neuroscience and mental health.

Mental health problems have a unique place in science because they must be understood not just through chemistry and biology, but also through emotions. Mental health may be the only field of science in the world where a piece of art can teach you something that data can't.

The Dax Centre provides a platform for communication between the Florey and the community. Open to the public, it provides a space to learn about mental health in everyday life, and some of the science done in the building. Florey PhD candidates volunteer to speak to visiting high school groups through the 'Mindfields program', presenting alongside speakers with lived experience of mental health issues.

"Presenting at The Dax Centre helps me step outside the academic bubble that I often find myself in while undertaking my research," said Alice Whitehead, a Florey PhD candidate who communicates her research in protein receptors for the relaxin hormone and its role in conditions like fibrosis.

"Presenting my research shows me points of view that I wouldn't otherwise be aware of. Students have great ideas to offer when it comes to understanding mental health," says Alice.

Alice considers her role at The Dax Centre highly rewarding as it helps her to see the link between her research and the impact it has on people's lives. The program also encourages high school students to learn about cutting edge neuroscience research and to explore scientific career paths after leaving high school.

Combining The Dax Centre's mission of raising awareness about mental health issues and reducing stigma through art and the Florey's scientific research, the Mindfields program helps to bridge the gap between complex science and the more nuanced, emotional aspects of mental health. 

## Masters of science communication

**L**ike these articles? The Florey hosted four Masters level students who were undertaking a science communication subject this semester who authored these articles. Here's what they said about the project:

### Jemima, Masters of Biomedical Science at the Florey

"I think it's really important that science is accessible for all and this project has taught me how to communicate science in an interesting and accessible way without overcomplicating and getting caught up in jargon. This is extremely useful for me in the future as I convey my research to both scientists and non-scientists."



### Tom, Master of Science (Computer Science)

"The project was interesting to me because it gave me an opportunity to understand the process behind writing articles and information discovery. It allowed me to learn more about mental health and what work was being done in the field at the Florey. It is interesting and heartening to know what is going on at the Florey and Dax Centre now. The skills in communication and writing I have learnt doing this project will be useful going forward in my degree."

### Naushad, Master of Biomedical Science at the Florey

"I chose this project because I want to be able to communicate neuroscience on more levels. The science communication subject and this project have been a valuable experience in learning how science journalism works and about some of the more diverse ways neuroscience has to be communicated, and how it affects people. I hope to do more science communication in the future and this was a good step in that direction."

### Sophie, Master of Science (Epidemiology)

"I chose to undertake the Brain Matters project as I was interested in understanding the role that the Florey has in progressing neuroscience and how it can have such a profound effect on the lives of those living with a mental health condition. Being able to communicate science to the public is essential for the progression of science, and I know I will use the skills learnt from this subject and from the Brain Matters project throughout my career."

## Never too young

**O**ne of our youngest supporters has organised a bake sale to raise funds for research into Multiple System Atrophy, a rare neurodegenerative disorder that affects the nervous system and movement.

Eight-year-old Daniel Harris held the bake sale in honour of his late nanny Alison Milhavet who recently passed away after a difficult battle with Multiple System Atrophy.

Daniel's mother, Nicole, is naturally very proud of her son's efforts.

"He chose to donate the proceeds raised to the Florey Institute in order to help people like his Nanny. He was very proud of the money he made and his contribution; it's a lot of money for an eight-year-old!", said Nicole.

Daniel is a keen member of a Joey's Scout Group, and is chasing his *Promise Challenge*, the highest achievement that a Joey Scout can earn. He's got our vote! 🗳️



Daniel Harris Bayswater West Public School.



Shylee Binder, ITSM

## Running for answers

**T**hank you to the Information Technology Services Management Corp (ITSM) team who ran in the City to Surf race, raising funds and awareness for the Florey. With 26 staff members taking part and ITSM matching the team's fundraising, they raised \$10,000 for research into Huntington's disease.

Spokesperson Shylee Binder was motivated to rise to the challenge to support critical research into Huntington's disease.

'My partner's godfather in the UK suffers

from Huntington's disease. I haven't had the chance to meet him personally but from what I've heard he is known for being someone who had a love for life and strong passion for good music. Unfortunately, his health deteriorated quite significantly and since being diagnosed, he has suffered a stroke which has meant he needs around the clock care," said Shylee.

"Running for this cause meant a lot as we knew that the funds raised for the Florey could potentially help people like Gary in the future." 🗳️

# I'D LIKE TO   **IMPROVE LIVES** THROUGH **BRAIN RESEARCH**

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Surname:

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Email:

- I would like more information about making automatic regular donations.
- I would like updates on brain research  by mail  by email
- I have left a gift in my Will to the Florey
- I intend to leave a gift in my Will to the Florey
- I would like to speak to someone about how I can remember the Florey in my Will

I would like to donate \$

Enclosed is my  cheque  money order

or debit my

Mastercard  Amex  Visa

Card number:

Expiry date:

Signature:

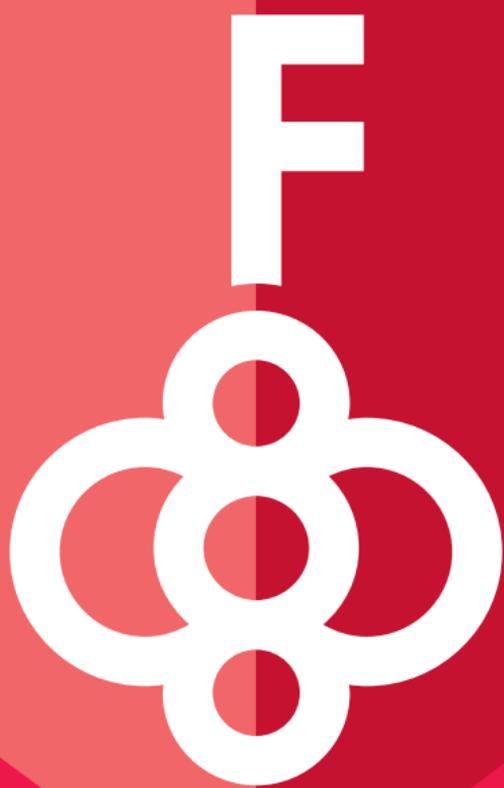
Other ways to donate:

- Call our free call credit card donation line on 1800 063 693
- Fax your donation to us on (03) 9035 3107
- Online at [www.florey.edu.au](http://www.florey.edu.au)
- Send your donation to The Florey Institute of Neuroscience & Mental Health, Reply Paid 83037, 30 Royal Parade, Parkville, VIC 3052

Thank you for your valuable support.  
All donations over \$2 are tax deductible.

Please let us know if you wish to change any of your personal details, contact preferences, or opt out, using any of the above contact methods. The Florey Institute of Neuroscience & Mental Health records information about its supporters that includes address and donation details, and is used solely by the institute but is not sold, traded or passed on to any third parties.





## Additional Public Lectures

**By popular demand, we're pleased to announce the addition of two more free Public Lectures for 2019. We look forward to seeing you at the Florey soon to catch up on our latest research. More details can be found by visiting [florey.edu.au/events](http://florey.edu.au/events). For those unable to join us on the day, the recordings will be available online at the 'Events' page of the Florey's website.**

 **Keep up to date with all our upcoming and recent lectures online: [florey.edu.au/events](http://florey.edu.au/events)**

**Available for viewing on the Florey website**  
**Epigenetic inheritance - health and lifestyle across the generations**

Dr Terence Pang

Dr Terence Pang will discuss the fascinating theme of epigenetic inheritance, a novel discipline that may explain how our health and lifestyle choices could have profound implications for the health outcomes of future generations.

Working at the interface between biology, medicine and environmental science, Dr Pang will discuss how we have come to discover that life experiences and environmental factors can modify behaviour of a species across generations.

**Thursday November 14 at 6pm**  
**Can healthy lifestyles help lower the risk of dementia?**

Dr Matthew Pase

Dementia may be influenced by a complex interplay of genetic and environmental factors.

In this lecture Dr Matthew Pase will discuss the latest evidence on whether healthy lifestyles can help lower risk of dementia. Focus will be given to lifestyle factors such as maintaining a healthy heart and prioritising adequate sleep.

The lecture will also outline how being healthy in midlife can help the brain in later life.

## Thank You

The Florey thanks our recent donors who kindly donated \$500 or more between 7 June 2019 and 6 September 2019

David & Slavka Abraham | Joan Adler | Michael Aitken | All Souls' Opportunity Shop | Annemarie & Arturo Gandioli-Fumagalli Foundation (Perpetual Impact) | Margaret & Philip A'Vard | Australian NPC Disease Foundation | Rita Avdiev | Julian and Jillian Bales (Australian Philanthropic Services Foundation) | Ross E Barker | Walter Beale OAM | Richard & Mirion Bearman | Matthew Benson | Jonathan Benson | Angelo Bladeni | The Hon Neal Blewett AC | Cornelis & Trish Boekel | Graeme Bowker | Steve Boxshall | BP Employee Matching Fund | Brain Australia | Arnold & Mary Bram | Brian M Davis Charitable Foundation | Louise Buchanan | Jarrod Byham | M G Cavanagh | Diana Cherry | Patricia Clennett | Helen & Bruce Cochrane | Dorothy Collin | Computer Transition Systems | David Copolov AO | Frank Cotela | Keith Curry | June Danks | Hector Davis | Dina & Ron Goldschlager Family Charitable Foundation | Rose Downer | Susan Duncan | Patrick English | Andrew Erikson | Estate of Moya Margaret Allwell | Carolien Evans | Janine Ferguson | Fred Frohlich | Foundation for Imaging Research | Rosemary Geer | Peter Gilbertson | Goldsmith Family | Louise Gourlay OAM | Susan Grant | Peter Gray | Sandra Hacker AO | Harfleur Group Pty Ltd | Harold Mitchell Foundation | Robert Henwood | Tim Hogg | Bill Holdsworth | Doug Hooley | Joan E Ikin | Inner Wheel Club of Pakenham | ITS Management Pty Ltd | J and M Nolan Family Trust | JDR Family Trust | Kathleen Johnston AM | Peter Kelly | Kennedy Family Foundation (Mutual Trust) | Val Kennedy | Terry & Janet Kinsella | Pamela Knott | Patricia Levy | William P Lewis | Elizabeth Loorham | Peter Lumley | Elaine Mann | Maple-Brown Abbott | Heather Mason | Massey Foundation | Judy Matear (Mutual Trust) | Adrienne McMahon | Elizabeth Mildwater | Gillian Montgomery | Judith Moore | Mary Morris | Frank Naylor | Nell & Hermon Slade Trust | Valerie Osbourne | Judith Overbeek | Pakenham Opportunity Shop | Mary Phiddian | Ann Poole | Michelle Quigley QC | Deborah Reich | Ann Reid | Relton Co Pty Ltd | Ralph & Ruth Renard | Donald Rewell | Caroline Richardson | Judy Roach | RobMeree Foundation | Jurgen Rochelmeyer | Adam Ryan | Frank Shelton | Susan Sims | Gary Stiliano | Bruce Sykes | Allene Symonds | Kathryn Thaniel | The Finkel Foundation | The Lindsay & Heather Payne Medical Research Charitable Foundation (Perpetual Impact) | The Miller Foundation | The Roebuck Foundation | The Stuart Leslie Foundation | Wendy Thomas | John & Lesley Thrum | Gary Travaglia | Michael Troy | David Vernon | Philip Weickhardt | Karen Wells | John White | John Wilde | Sineke Winter | Meredith Woods | Vesna Zivic

### Donations in memory of

Nathan Black	Bernard Kelly	John Hawell Potter
Annie Brown	Roger Knott	Brent Proctor
Teresa Ciravolo	Anton Kopecek	Laurie Scott
Margaret Curry	Barrington Mather	Merle Whiteside
Vanda Margaret Davis	Rosemary Mulcare	
Margaret Fitzgibbon	Kevin O'Shea	

### Donation in celebration of wedding

Wedding of Nina & Jason Shoulal Hernandez

### Raising funds for the Florey in the community

Catherine Harrison - Run Melbourne  
Talia Lipschitz and members of Results Based Training Hawthorn - 5k challenge  
Jessica Loprese & Claire Baker - Stadium Stomp for Huntington's disease  
Amber Griffin - Hair shave for Huntington's disease  
Staff of ITS Management - City to Surf (Sydney) for Huntington's disease

For more information contact  
[communications@florey.edu.au](mailto:communications@florey.edu.au) or 03 9035 3000.

Find us on Facebook and Twitter at our website: [florey.edu.au](http://florey.edu.au)

The Florey Institute of Neuroscience and Mental Health conducts its research on the lands of the Wurundjeri people of the Kulin Nation.

We pay our respects to the traditional owners of this country, their ancestors, their children and the lore of the creator spirit Bunjil.

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