

## From the Director A/Professor Greg Sutherland

As it has for all of you 2020/2021 has been a most unusual time for the bank. Our staff and those from the Charles Perkins Centre (CPC), Department of Forensic Medicine and the wonderful staff of NSW Health have all played their part in making sure that we have been able to operate in the face of laboratory and University lockdowns. Unfortunately our research work was not so lucky and many projects have been put on the backburner for 2022. Our big news was that we had double retirements in early 2021 of both our Director Prof Jillian Kril and our Manager, Donna Sheedy. They have worked together as a team promoting brain donation for many years and their collective institutional knowledge is irreplaceable. Another highly experienced brain banker, Julia Stevens, has taken over day-to-day operations at the bank and is giving me great support to make the transition as smooth as possible. On behalf of the bank team, I wish Jillian and Donna all the best in their retirement and we will continue to reach out to utilise their expertise.

We also welcomed two new members to the team, Dr Dhiraj Maskey who is running our laboratory and Mario Novelli, who is our new Research Assistant. With the changeover of staff we ran a virtual 'retreat' in July that included some of our key research partners from Neuropathology, Addiction Medicine and Statistics. Moving forward we are looking to merge our research and banking activities to take advantage of all the great minds we have in the CPC and elsewhere at the University.

As you may know, BTRC tissue is distributed around the world and we are excited to develop National Institute of Health (NIH)-funded collaborations with US Researchers at Brown University, Rhode Island, University of North Carolina at Chapel Hill and Washington University in St Louis. While other research groups using our tissue have published in high impact journals such as [Nature Communications](#) and [Molecular Psychiatry](#). We also published ourselves in [Molecular Psychiatry](#), a study



where one of our PhD students, Andrew McCorkindale was joint first author ([read it here](#)), while another student, Dr Patrick Paasila completed his PhD and went back to his 'day job' at medical school. Another one of our PhD students and BTRC staff member, Caine Smith, published an excellent study on how brain lipids change due to chronic alcohol intake, published in the prestigious [Journal of Neurochemistry](#).

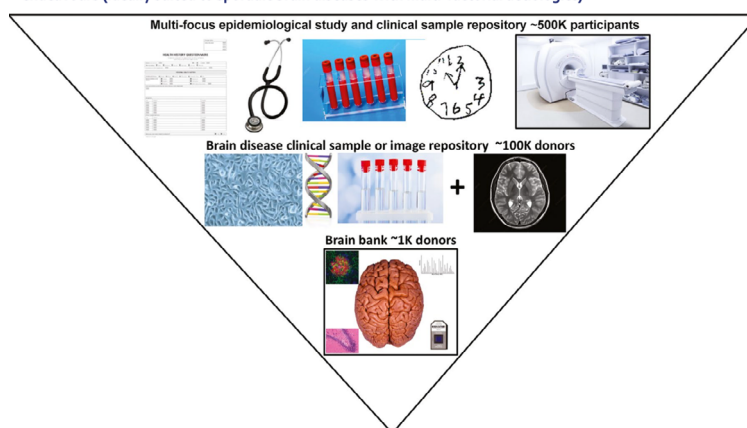
Both the bank ([@uobdonorprogram](#)) and myself ([@brainomiac](#)) are on Twitter so please follow us to keep up with what we are doing, and more generally what is happening in the exciting world of brain research. Lastly but by no means least, thank you and your family for continuing to support brain research by being a brain donor. It is a fantastic gift that facilitates research all around the world. On behalf of my great team, I wish you a safe and prosperous 2022!

# 2021 Highlights

## May

Greg had a paper published in MJA. Access the press release here: <https://www.mja.com.au/journal/2021/virtual-brain-bank-maximises-research-potential-brain-donation>

2 Schematic diagram of an integrated brain biobank with capacity to combine with and leverage wider biobanking endeavours (ideally suited to sporadic brain diseases with multi-factorial aetiologies)



C = 1000

## June

UoB was lucky enough to present at the Australian and New Zealand Addiction Conference on the importance of brain banking for research into alcohol addiction.

## September

NSW BTRC and Sydney Brainomics held a Virtual Retreat to share bank processes, brainstorm future projects and areas for improvement, and discuss the advantages and limitations of various banking techniques.

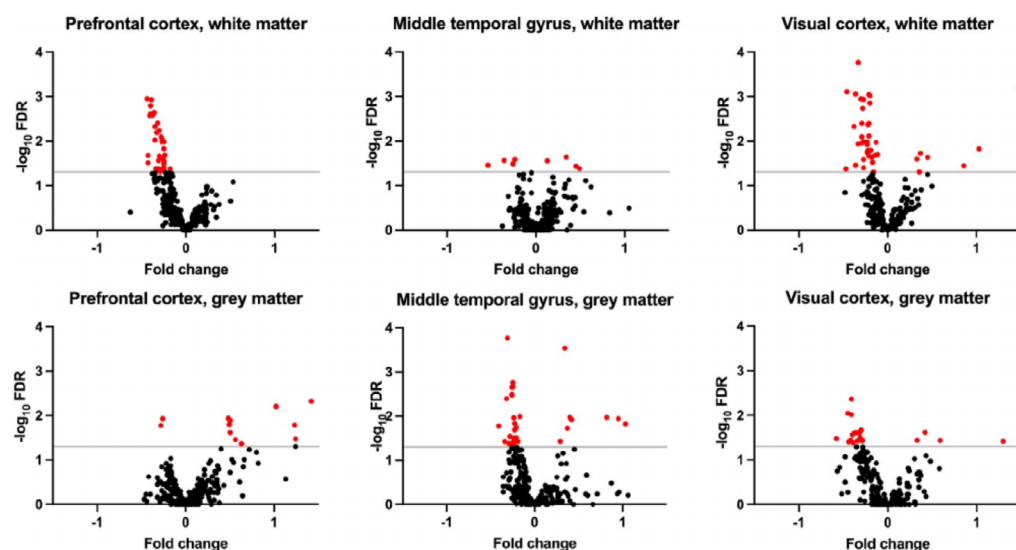
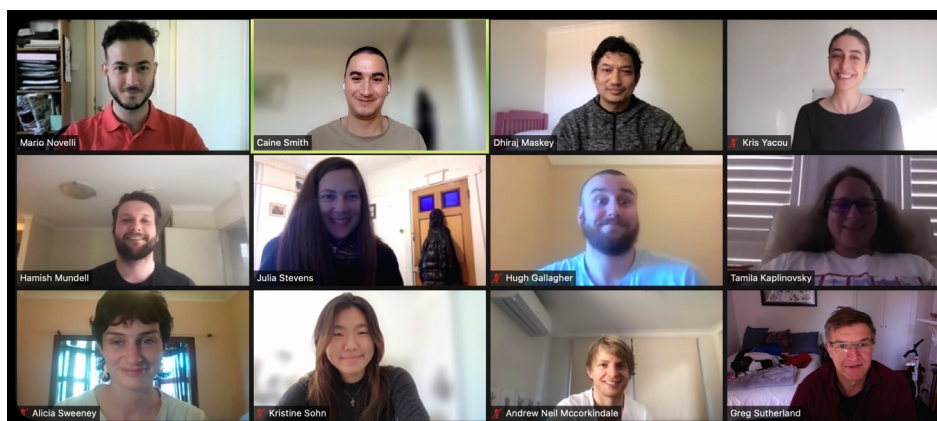


FIGURE 1 Volcano plots representing relative changes in glycerophospholipid and sphingolipid species across white and grey matter in the PFC, MTG, and VIS regions. Each point represents an individual lipid species. Points above the grey line indicate significance. Fold change is AUD relative to controls. n (subjects) = 20 per group

## October

Caine had a paper published on the lipid profile of post-mortem brain tissue of individuals with alcohol use disorder in the Journal of Neurochemistry. Access here: <https://onlinelibrary.wiley.com/doi/full/10.1111/jnc.15530>





## Wellbeing Study Update

Between mid-2020 and early 2021 we sent out a number of surveys to track the impact Covid-19 was having on donor wellbeing. We had overwhelming participation and would like to thank everyone who got involved.

We sent the surveys out at three-month intervals beginning just as NSW was coming out of the first lockdown. We hypothesised that lockdowns would have long-term impacts on indicators such as mood, sleep, and social connectedness; however many donors reported a sustained ability to cope with problems well. With another turbulent start to the year we hope that this remains the case for most of you.

Another preliminary insight gained was that overall sleeping habits did not experience a large-scale shift during or post-lockdown, even when compared to sleep data collected in 2017. There was a marginal increase in how long people spent in bed not sleeping, in 2017 averaging just over an hour, in 2020 averaging nearly an hour and a half. The Sleep Health Foundation suggests training the brain to link bed time with sleep time by staying out of bed as much as possible when not actually sleeping to improve sleep quality.

Encouragingly, over 60% of respondents stated that they had found new ways to stay connected with loved ones and neighbours. Staying socially connected is important not just for staving off loneliness, it also improves memory and cognitive performance, and can even extend life expectancy. With Covid continuing to impact the ways we interact with our environment and each other, the importance of staying socially connected cannot be understated.



## Collaborations

Greg and Ali were recently interviewed by our friends at The Brain Foundation for an article on brain donation. Check it out by scanning the QR code or visiting their website at the link below. Keep an eye out for upcoming (virtual) events for 2022 Brain Awareness Week, 14-20 March.

<https://brainfoundation.org.au/everything-you-need-to-know-about-brain-donation>

## Staff profile



Dhiraj Maskey  
Lab Manager

What is your background and how long have you worked at the BTRC?

I have worked at the BTRC since early 2021. I have a Master's and Doctorate in Human Anatomy. My doctoral research focused on the distribution of calcium binding proteins in the brain. Previously I worked as a postdoctoral fellow investigating the effect of radiofrequency exposure in the brain due to excessive mobile usage.

What are the most rewarding aspects of working at the BTRC?

BTRC provides me with an opportunity to enhance my understanding of the causes of various diseases, while also providing a sense of satisfaction in helping researchers worldwide access tissue for their critical research.

Why do you think research into brain diseases is important?

The human brain is a complex command centre that enables complex functioning of the highest product of biological evolution. Maintaining a healthy brain during one's life is the utmost goal in pursuing health and longevity. Understanding how the brain functions aids in making advances in treating various brain disorders.



# Get involved...

## Citizen Science

Contribute to scientific research, learn something new and have fun! Citizen science increases collaboration and knowledge sharing between the public and scientists. Some projects currently being undertaken, and how to get involved, are listed below.

### Eyewire

Team up with AI to reconstruct neural circuits in the Eyewire game! Playing directly advances Connectomics, a field of neuroscience focused on mapping and modelling information processing circuits in the brain. Click [here](#) to play!

### Skill Lab: Science Detective

By completing problem-solving games you can help scientists discover how people make decisions. Also contributing to databases of cognitive indicators for different demographics, e.g. age and gender. Play by clicking the link: [scienceathome.org/games/skill-lab-science-detective/](https://scienceathome.org/games/skill-lab-science-detective/)

### Climatewatch app and Urban Wildlife app

Download either (or both) from the app store on your phone and take pictures of wildlife in your suburb to help researchers understand how temperature and rainfall affect the seasonal behaviour of Australia's plants and animals, this also helps scientists improve the ways we co-exist with our native flora and fauna.

### Saving our Species

NSW government initiative Saving our Species uses motion-triggered cameras to take thousands of pictures of threatened species. This fills knowledge gaps and informs conservation programs. However, they need help looking through all the images and tagging the animals in them. Hosted on Digivol, it is easy to make an account by clicking the link: <https://volunteer.ala.org.au>

### FluTracking

Running in Australia for the past 15 years, this project uses community surveillance to monitor influenza by sending a weekly survey that checks for symptoms and takes less than 30 seconds to complete. Sign up at [flutracking.net](http://flutracking.net)

## In Memoriam

The Using our Brains Donor Program would like to acknowledge the generosity shown by our donors and donor families. It is an act of great foresight and kindness to give at a time of loss, so that others may be helped in the future.

To the families of donors that have died this year, the Using our Brains Donor Program would like to extend sincere sympathy and gratitude.

Over the years, friends and families of donors have given memorial donations to the Using our Brains Donor Program in lieu of flowers. If you would like to donate to our research program, please contact us for details.

## Connect with us

### Twitter

[@uobdonorprogram](https://twitter.com/uobdonorprogram)

### Instagram

[@usingourbrains](https://www.instagram.com/usingourbrains)

### Facebook

[@usingourbrains](https://www.facebook.com/usingourbrains)

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### For more information

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