

# the NeuRA magazine

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Issue 52 | Autumn 2026

## THE QUEST TO SOLVE brain health challenges



**Tackling  
Parkinson's  
Disease from  
all angles**

### **PLUS:**

- *Ask a researcher:  
what can hair tell us  
about stress in autism?*
- *Five minutes with  
Malcom Ginn*



**When I look around NeuRA,** I'm particularly pleased to see world-leading experts and emerging talent working together to address the most pressing changes in brain health. Our team is strengthened by the diverse experience

and extensive knowledge of our people, who are passionate about their work and continue to adapt and innovate as new opportunities and challenges arise.

In this edition of *the NeuRA Magazine*, you'll meet our NeuRA Quest scholars. These three highly credentialed researchers have joined us with extensive clinical and research expertise, along with strong collaborative networks, to help advance our mission of improving brain health across the lifespan.

You'll also find updates on some of our latest research, including work in Parkinson's disease and schizophrenia. In addition, you'll be introduced to one of our generous supporters, Mr Malcolm Ginn, and hear from Dr Adam Walker about what hair can tell us about stress in people with autism.

Thank you for your ongoing support of NeuRA, which enables us to continue making life-changing discoveries. We look forward to sharing more of our research with you.

I hope you enjoy this edition of *the NeuRA Magazine* and we welcome your feedback.

Warm regards,

**Professor Matthew Kiernan AM**  
CEO, NeuRA (Neuroscience Research Australia)

## Repurposed blood pressure medication may prevent cancer-related cognitive impairment

Repurposing a safe and affordable blood pressure medication may help prevent cancer-related cognitive impairment.

PhD candidate, Delyse McCaffrey, led the study that looked at using candesartan, an angiotensin receptor blocker used for high blood pressure, to assist with cancer-related cognitive impairment. The study in a mouse model of breast cancer showed it prevented spatial memory impairment without negatively affecting primary cancer outcomes.

"Up to 75% of cancer patients report cognitive symptoms, with around 30% experiencing persistent deficits that interfere with daily functioning and quality of life," Ms McCaffrey said.

"This can impact a person's ability to think, learn, remember, or make decisions. Despite the profound economic and psychosocial burden, there are limited therapeutic options.

***"This highlights a potential low-cost strategy to protect cognitive function before chemotherapy begins."***

The research supports further exploration in clinical settings, including examining whether the medication can reverse established cognitive impairment. ●



**PhD candidate  
Delyse McCaffrey.**



PhD candidate, Gerardo Mendez-Victoriano.

## Schizophrenia and bipolar disorder may benefit from anti-inflammatory treatments

Anti-inflammatory treatments could help a specific subgroup of patients with schizophrenia and bipolar disorders, NeuRA researchers have found.

PhD candidate, Gerardo Mendez-Victoriano, said they found that some people with schizophrenia and bipolar have overactive inflammatory signals in part of the brain that creates dopamine. The signals belong to a family of molecules called Tumour Necrosis Factor Superfamily, related to strong immune reactions and cellular death in the brain.

“This finding means that inflammation might be actively contributing to symptoms,” he said.

“It suggests that anti-inflammatory treatments could help a specific subgroup of patients who have high inflammation. This moves us closer to more personalised treatment, rather than ‘one treatment fits all’.

“We now need to explore how we can safely calm down this inflammation and understand if doing that would improve symptoms. We also need to determine how to identify patients with this inflammatory profile while they’re alive.” •

## Farewell to Carole Renouf

NeuRA recently farewellled Executive Director of Professional Services, Carole Renouf, as she headed to the United Kingdom for family reasons.

Familiar to many of our supporters, Ms Renouf had joined NeuRA as Fundraising Director, going on to serve as Interim CEO before leading the Professional Services Team. Her leadership throughout this time was wide-ranging, from developing new initiatives and hosting events, to overseeing infrastructure projects and supporting staff.

“Carole’s influence and impact here at NeuRA has been extensive and we are deeply appreciative of her efforts,” NeuRA CEO, Professor Matthew Kiernan said.

“She committed fully to our people, purpose and values and created lasting legacies. We wish Carole all the best for her next chapter.”

NeuRA has created a new role of Chief Operating Officer and has appointed Andrew Finch, who had previously served as Group Executive and General Counsel with Qantas and partner at Allens Linklaters.

“Andrew brings a wide range of high-quality expertise and experience to NeuRA,” Prof Kiernan said.

“He is recognised as a skilful and personable leader, trusted and respected by those with whom he works. We are honoured he has chosen NeuRA as the next chapter in his distinguished career and already seeing the benefits of his wide-ranging experience.” •



Carole Renouf has been farewellled after more than five years at NeuRA.



# The Quest to solve brain health challenges

NeuRA Quest Scholars  
Associate Professor Julia Lappin, Professor Michelle Farrar and Associate Professor Emma Devenney.

*With brain health challenges on the rise, the need for improved diagnosis, new treatments and better prevention is clear and three new NeuRA researchers are among those leading the charge.*

Last year NeuRA launched an innovative recruitment program, NeuRA Quest, seeking the best and brightest to join the team. Three leaders in their field have been appointed NeuRA Quest Scholars, joining us to share their expertise and propel our work in tackling brain health challenges across the lifespan.

NeuRA appointed its first clinical psychiatrist, with Associate Professor Julia Lappin bringing a range of mental health expertise and continuing to hold positions as Associate Professor at UNSW's Discipline of Psychiatry and Mental Health, as well as Clinical

Academic Psychiatrist at Prince of Wales Hospital.

Professor Michelle Farrar brings paediatric neurology expertise to NeuRA, while also continuing as Professor of Paediatric Neurology and Neuroscience at UNSW Sydney and Sydney Children's Hospital Network.

Associate Professor Emma Devenney is a neurologist and NHMRC early career fellow conducting cutting-edge research into the detection and monitoring of neurodegenerative disease.

NeuRA CEO and Institute Director, Professor Matthew Kiernan AM,

said the Quest program had successfully attracted researchers who would assist in delivering the new research strategy, *NeuRA Forward*.

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“NeuRA Quest and the talent it attracts will help us expand and accelerate our ability to combat the rise in dementia and other brain health disorders,” Prof Kiernan said.

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“They have a strong commitment to making a difference in the world of brain health, with demonstrated potential and we are providing them with an enhanced culture of research excellence, career development, leadership and community.”

The Quest Scholars have commenced their work at NeuRA with projects working to address brain health challenges across the lifespan.

Prof Farrar said her role fits with her work as a clinician at the Sydney Children’s Hospital and an academic at UNSW, allowing her to move from the bedside to bench and back, while also building collaborations as she undertakes her work to test new ways to treat neurological conditions in children.

“With technological advances we now have an opportunity to modify underlying disease mechanisms rather than manage symptoms and increase the number of therapies for children with neurological conditions,” Prof Farrar said.

“My role at NeuRA provides a dedicated and sustained research environment to prioritise translational research and personalise care.”

Assoc Prof Lappin will also maintain clinical and academic appointments at the Prince of Wales Hospital and UNSW, with her work at NeuRA looking at mental health and healthy brain ageing.

“I’m a clinician researcher with an interest in improving outcomes in mental health and cognitive health,” she said.

“The NeuRA Quest program is a fantastic opportunity to work together with other experts at NeuRA in this space. My work will approach brain

health, that is both mental and cognitive health, through a neuropsychiatric lens, to better understand how issues such as mental health difficulties, sleep disruption, early life adversity and lifetime trauma impact healthy brain ageing from midlife, including in women experiencing peri/menopause.”

The work being undertaken by Assoc Prof Lappin also intersects with the projects Assoc Prof Devenney is undertaking, looking at neurodegeneration and mental health.

“I was drawn to NeuRA because of its strong translational focus and commitment to tackling the growing burden of neurodegenerative diseases through collaborative, high-impact research,” Assoc Prof Devenney said.

“My work focuses on identifying and understanding biomarkers to improve diagnosis and monitoring of neurodegenerative diseases. I aim to strengthen collaborations across biomarkers, psychiatry and industry partners to optimise trial efficiency and expand access to emerging therapies. Our team hope to identify the overlap between neurodegenerative and neuropsychiatric conditions and contribute to more timely and effective interventions.”

Professor Kiernan said the Quest scholars also brought to life the partnership agreements with UNSW, South Eastern Sydney Local Health District and across the precinct, through the other positions they held and the collaborative opportunities that unlocked.

NeuRA Quest remains active, with the institute committed to attracting new talent to help deliver projects that support the research strategy, *NeuRA Forward 2025–2030*. •



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– Associate Professor Julia Lappin



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– Professor Michelle Farrar



“I was drawn to NeuRA because of its strong translational focus and commitment to tackling the growing burden of neurodegenerative diseases through collaborative, high-impact research.”

– Associate Professor Emma Devenney



Professor Carolyn Sue AM is the Sydney site lead for a new stem cell therapy to treat Parkinson's disease.

Dr Michael Li is working to improve treatments for people with Parkinson's disease.

## Improving our understanding and treatment of Parkinson's disease

**P**arkinson's is the fastest growing neurological condition in the world and the second most common neurological disease in Australia after dementia. So NeuRA researchers are working to improve outcomes for patients from our understanding of the condition through to treatment.

Postdoctoral student, Derya Dik, led research that found Parkinson's disease causes significant and progressive changes to the blood vessels in the brain.

"Traditionally Parkinson's researchers have focused on protein accumulation and neuronal loss, but we have shown the impacts on our cerebrovasculature – the blood vessels in our brain," she said.

***"By targeting these progressive, region-specific changes, we may be able to slow disease progression and improve outcomes for individuals suffering from Parkinson's disease."***

"This study may lead to new treatment options for people with Parkinson's disease, but we also want to better understand the

contribution of vascular pathology in other neurodegenerative disorders and explore whether this can reveal new targets for therapies and treatments for people with those conditions."

Improved treatment is in the spotlight, with NeuRA's Professor Carolyn Sue AM lead investigator for the Sydney site of an exciting new global clinical trial. This is a Phase 3 clinical trial of new stem cell therapy from BlueRock Therapeutics and Bayer that aims to target the condition at its source.

"This method looks at modifying the disease itself, rather than just treating the symptoms," Prof Sue said.

"In this trial, people with Parkinson's in Australia will be able to have what I call new 'baby' brain cells inserted via a surgical procedure."

The trial, called Expedite-2, is assessing the efficacy and safety of bemdaneprocel and is designed to enrol more than 100 people with Parkinson's. The therapy is designed to replace the dopamine producing neurons that are lost in Parkinson's disease. In a surgical

procedure, dopaminergic neuron precursors are implanted into the brain of a person with Parkinson's disease. Once transplanted, they have the potential to re-form neural networks affected by Parkinson's and to potentially restore motor and non-motor function to patients.

While the findings for the trial may be years away, researchers like Prof Sue remain cautiously optimistic.

NeuRA PhD candidate, Dr Michael Li, is also exploring new treatment options. He is



Associate Professor Jasmine Menant is leading StepSafe, a falls prevention project for people with Parkinson's disease.

examining the cellular defects in dopaminergic neurons derived from Parkinson's patient skin samples, how they vary between individuals and whether they can be reversed by drug treatments at a cellular level.

"We are hopeful of being able to identify pre-clinical leads for new disease-modifying drugs for Parkinson's Disease, and establish proof-of-concept evidence for stratifying participants in Parkinson's trials based on cellular pathology," Dr Li said.

"If successful, these outcomes will be important in addressing the need for mechanistic treatments to slow the progression of this prevalent neurodegenerative disease."

Alongside this, researchers are also working to prevent falls in people with Parkinson's. Associate Professor Jasmine Menant has designed a StepSafe falls prevention project that uses exergames.

"StepSafe builds on previous research that has demonstrated the benefits of training balance and cognition concurrently with home-based interactive games for falls prevention," she said.

***"This project is a partnership between researchers and clinicians, as well as people with lived experience in Parkinson's and national and state consumer advocacy organisations."***

"We are hoping that the findings of this project show that we can reduce falls and improve balance, mobility and cognition in people with Parkinson's in a cost-effective manner. If successful, it can be implemented broadly because of the home-based, portability and ease of use features of the system." •



## 5 MINUTES with Malcolm Ginn

**Above:**  
Malcolm Ginn  
with his late wife,  
Maureen.

*Malcolm Ginn from Victoria has made donations to NeuRA in memory of his late wife, Maureen, in the hope of improving treatments for and preventing conditions affecting brain health.*

**You have made donations to NeuRA in memory of Maureen. Can you share a little about how you met and what you'd like people to remember about her?**

Maureen and I met at work in Western Australia when she was 17 and I was 20. I was working as a clerk and she was attractive and shy. We used to go to the cinema together. We married when she was 21 and built a life together including two daughters, Dianne and Carol.

Maureen was very reliable, good with her children, had a sense of humour and a passion for genealogy. Life wasn't always easy, and Maureen's health had its challenges, including her mental health and later dementia.

In 2015, we moved to Victoria to be closer to one of our daughters who was working in an aged care

home. Soon after that, Maureen was admitted and lived there until she died in 2021.

**Maureen had dementia and mental health challenges. What were the first signs of dementia for your wife?**

Maureen's health was a challenge throughout much of her life. We suspect she didn't receive all the diagnoses and treatments she needed but we know she had mental health challenges and later developed dementia. In the end, death was a blessing. These diseases must be fought.

**What inspired you to support NeuRA and what areas of research are of most interest to you?**

Many people have health challenges like Maureen had, including dementia and their mental health. I would like to see the treatments improve, and I would also like to see increased support for those in caring roles.

Medical research can help improve the lives of people like Maureen and myself, which is why I have saved my pension to make donations in her honour. What I provide is a drop in the ocean but the way my wife died must mean something. •



## Ask a Researcher



Group leader in NeuRA's Laboratory of Immunopsychiatry, Dr Adam Walker.

*In this edition, NeuRA Research Fellow and Group Leader in the Laboratory of Immunopsychiatry, Dr Adam Walker, answers questions about his latest autism research.*

**Q: We heard NeuRA research has found hair samples may play a role in better understanding the impact of stress on autistic children. How does that work?**

**A:** Autistic children may be non-verbal or not have the words or other typical communication strategies to clearly explain their feelings. Our research investigated hair cortisol levels as a way of better understanding the experience of stress in autistic children.

Hair cortisol concentration is a non-invasive biomarker that is already used to provide retrospective data for the assessment of stress in areas of mental health and some diseases. During stressful situations, cortisol is incorporated into the hair from the blood, as well as via sweat and sebum over weeks or months. This means hair cortisol can provide insight into a person's more chronic state of stress and wellbeing.

Our research explored the relationships between chronic stress, co-occurring conditions, sleep and autistic features, such as severity, using clinical data and biological samples from the Autism CRC Australian Autism Biobank.

We found that this may complement behavioural assessments for determining the impact of chronic stress.

**Q: Why is this finding important?**

**A:** While in many situations we can discuss with individuals their experiences and work to understand the interactions between stress, sleep and other factors, this can be difficult for some autistic children. In this context, hair cortisol concentration could be a new tool to help better understand the relationship between those factors.

We found that lower hair cortisol concentration was associated with greater autism severity, particularly internalised distress, behavioural difficulties, and co-occurring ADHD. There were also links between higher hair cortisol concentration and sleep anxiety, night wakings, lower family income and younger children.

Combining this biological information with behavioural insights can improve our understanding of an individual child's experience and may guide more personalised support in the future. •

## FREE Will-writing offer for NeuRA supporters

**Did you know that 60% of Australians do not have a legally valid Will?**

We are offering NeuRA supporters the opportunity to create your Will for FREE. Visit [safewill.com.au/neura](https://safewill.com.au/neura) by using the QR code and enter the special promo code: **NEURA100**



Progress in medical research is built over time through the generosity and altruism of people who believe in a better future for others. Many NeuRA supporters choose to express that belief by leaving a gift in their Will. These gifts help ensure our researchers can continue making new discoveries, transforming the lives of families affected by brain health challenges.



*NeuRA's Bequest Officer, Lauren, is available to help you to organise a gift in your Will and keep you up to date with NeuRA's research. Please feel free to phone Lauren on 02 9399 1093 or [bequests@neura.edu.au](mailto:bequests@neura.edu.au)*



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