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Acknowledgement of Country

Neuroscience Research Australia respectfully acknowledges the Bidjigal and Gadigal peoples of the Eora Nation as the Traditional Owners of the Land on which we stand and pays its respects to Elders past and present.

On the cover: Emma Tinkler, who has been diagnosed with Multiple Sclerosis and early-onset Parkinson's disease, with her daughters, Elodie and Agnes. As staunch supporters of medical research, they have participated in a number of NeuRA research trials, including the MUGgLE and MS Slip n Trip studies. Inside front cover: Professor Carolyn Sue AM seeing patient Declan Holmes, accompanied by his mother, Angela, at her clinic at NeuRA.

Purpose

Transforming lives through medical research.

We are an independent, not-for-profit, medical research institute dedicated to improving the health and lives of people living with brain and nervous system disorders.

Welcome



2023 marked a significant year for NeuRA, characterised by a focus on strengthening our leadership and deepening our key collaborations.

We were thrilled to welcome Scientia Professor Matthew Kiernan AM as our new Chief Executive Officer in November

2023. Professor Kiernan is a nationally and internationally renowned academic, clinician and research leader. His focus on neurodegeneration, specifically motor neurone disease and fronto-temporal dementia, is a perfect fit for NeuRA. Professor Kiernan has already begun to make a positive impact. He has revitalised our key partnerships with the University of New South Wales (UNSW) and the South Eastern Sydney Local Health District (SESLHD) and these are fundamental to our research success.

Carole Renouf, Interim CEO in 2023, has transitioned into the role of Executive Director, Professional Services, and continues to provide Professor Kiernan with strong support by managing all the functions which facilitate our research.

Throughout 2023 we have maintained a keen focus on good governance, revising our Constitution and Charter and changing the operating rhythm of the Board to encompass both operational and strategy meetings. I would like to thank all our Directors for their time, expertise and commitment.

The Board's composition also saw some changes. We bid farewell to Deputy Chair Kirsten O'Doherty after five years of dedicated service and welcomed Cheryl Maley appointed as an independent Director. Jo Karnaghan joined the Board as the new SESLHD representative, replacing Debra Graves. Finally, our deepest appreciation goes to Steve Tucker, who assumed the Foundation Chair position following the departure of Colin Tate AM who stepped down after two years of service.

I am immensely optimistic about NeuRA's future. Professor Kiernan's leadership, coupled with our strengthened partnerships, position us for significant advancements. We remain dedicated to fulfilling our mission with vigour and purpose.

Thank you for your continued support.

James MacNevin



I am extremely proud to return to NeuRA as CEO. NeuRA is where my neuroscience research began as a PhD student, just as the original floors were being laid, well before the Margarete Ainsworth Building came to exist. At the time, my supervisor Professor David Burke, one of the founding

scientists, said to me, "One day you will see a great institute flourishing on this site!" His prediction came true.

The nimbleness of NeuRA, as an independent medical research institute, coupled with the scale of our founding partners, UNSW and SESLHD, is a winning combination. In such an environment, we are well placed to make an enormous difference to the community, confronting everincreasing problems of brain health. Together, Australia and our neighbouring Asia-Pacific partners represent the largest global population who stand to benefit from research discovery. It is brain health that will determine our trajectories and it is neuroscience research that will promote risk reduction, early diagnosis and new therapies.

In the space of just a few months, our research and professional services teams at NeuRA have driven a number of dynamic initiatives. We have hosted the highest quality international neuroscientists to inspire our staff: Professor Ray Dolan, University College London and the Baroness Susan Greenfield, Oxford University to name but two. We are improving our competitive grant success rates through mentoring, with an emphasis on impact. We are growing Government relations and consumer engagement. Patients attending NeuRA provide a daily focus for our research. The support we receive from our community enhances our initiatives and drives translation of new research into the clinic. Already, we have the opportunity, together with our founding health partners, to introduce the first monoclonal antibody therapies for Alzheimer's across the precinct, and nationally.

Thank you for travelling these exciting times with us.

Scientia Professor Matthew Kiernan AM

Matthe Muin

CEO and Institute Director

Impact

Transforming lives through discoveries & translation



29

research trials & studies



316

research publications in 2023



120

active research projects in 2023

Trusted voice at the forefront of neuroscience research

26,683

times NeuRA research cited over past 5 years* *2019-2023 SciVAl 23/4/24 2,580+

media mentions in 2023 298,487

NeuRA website visits in 2023



Local partnerships. World-class impact.

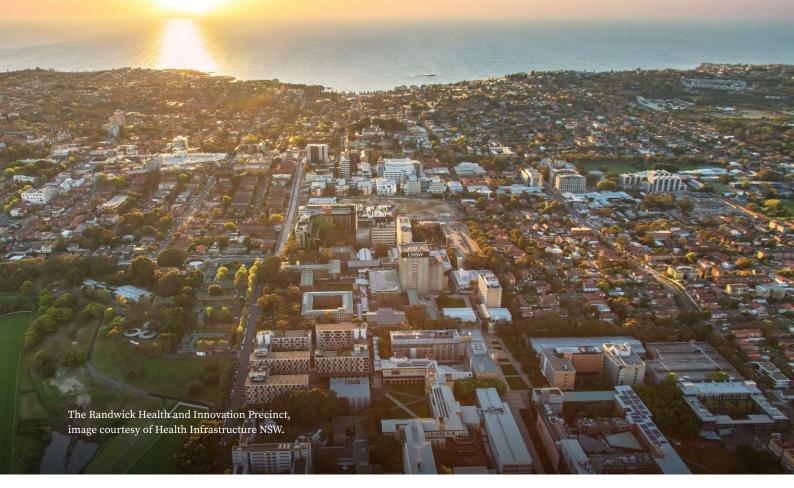
Our foundational partnerships with the University of NSW and South Eastern Sydney Local Health District (SESLHD) are at the heart of our ability to meet our driving purpose: to transform lives through medical research.

These collaborative relationships, bolstered by NeuRA's growing number of clinician-researchers, allow us to understand the key issues patients are facing today, and help our researchers ensure these are no longer the healthcare problems of tomorrow.

Against this legacy we are proud to be part of the Randwick Health and Innovation Precinct, a transformational co-located community of world-class education, research and healthcare organisations that will strive to solve global challenges and nurture lifelong health. Working with the Precinct's four founding partners UNSW Sydney, SESLHD, Sydney Children's Hospitals Network and Health Infrastructure NSW, alongside 13 other medical research institutes, will enable us to be part of a collaborative research community of more than 7,000 healthcare workers undertaking more than 1.8 million patient interactions per year, in conjunction with more than 58,000 students. Together, we are dedicated to transforming healthcare now and into the future.

"The Randwick Health and Innovation Precinct – bringing together partners from across this expanded campus – will be at the forefront of international healthcare, research and education."

Tobi Wilson, Chief Executive, South Eastern Sydney Local Health District



Our focus

Our mission is to discover solutions for neurodegeneration, mental health and healthy ageing through world-class medical research.



Neurodegeneration

Improving brain health through collaboration and innovation.

- Aboriginal Ageing
- Alzheimer's disease and other dementias
- Mitochondrial disease
- Motor neurone disease
- Parkinson's disease
- Stroke



Mental health

Pioneering solutions for positive mental health and improving understanding and treatment of mental disorders.

- Autism
- Bipolar disorder
- Schizophrenia
- Stress-related psychopathology
- Wellbeing and resilience



Translational neuroscience

Connecting research to real-world results for healthy ageing.

- Autonomic dysfunction
- Chronic pain and other pain disorders
- Child injury prevention
- Falls prevention and balance training
- Road safety
- Sleep apnoea and other sleep disorders
- Spinal cord injury





Connecting research to community

New clinics launched at NeuRA

To seamlessly integrate community care with research excellence, NeuRA has launched new clinics in motor neurone disease, frontotemporal dementia, mitochondrial disease and Parkinson's disease, led by Professors Matthew Kiernan and Carolyn Sue.



Dementia

D-risking dementia

CogDrisk is an innovative online tool developed by researchers at NeuRA and UNSW, led by Scientia Professor Kaarin Anstey, to assess individual dementia risk. Free and easy to use, it takes just 20 minutes to complete and provides a personalised dementia risk report that individuals can discuss with their doctor. Since it was launched in 2023, more than 14,000 people have used CogDrisk to better understand their dementia risk, and it has been rolled out by the Royal Australian College of General Practitioners as part of its professional development training program.



Aboriginal Ageing

Uncle Terry's contributions to community celebrated

Uncle Terry Donovan, a Gumbayngirr/Biripai man of Nambucca Heads, was awarded a Medal of the Order of Australia recognising his contributions to Aboriginal health and the Australian community at large. An integral member of NeuRA's Aboriginal Health & Ageing group, he has played a major role in the team's knowledge translation activities, advising and guiding on many projects, and providing mentorship and support.



Chronic Traumatic Encephalopathy

New insights in CTE and collision sport

An Australian-first study from the Sydney Brain Bank uncovered new insights into Chronic Traumatic Encephalopathy neuropathic change (CTE-NC) in former rugby players, as well as co-existing neuropathologies associated with progressive cognitive impairment and decline. Researchers found mixed neurodegenerative pathologies, including CTE-NC, were common across the player group, which was made up of individuals who all had extensive exposure to collision sport and exhibited progressive cognitive impairment during life.





Schizophrenia

Targeting new ways to decrease psychotic symptoms in schizophrenia

A clinical trial led by Professor Cyndi Shannon-Weickert found a drug that targets systems outside the brain, in this case the circulating immune system, decreased psychotic symptom severity and inflammation in people with schizophrenia. Paving the way for more personalised treatments for patients, researchers discovered a single dose of Canakinumab also decreased inflammation biomarkers in people with schizophrenia on antipsychotics.



Bipolar Disorder

Exploring the role of genetics in bipolar disorder

NeuRA researchers, led by Associate Professor Jan Fullerton, are exploring the role of genetics in the development of bipolar disorder, in a bid to improve diagnostics and treatment. The sub-set of the 45 and Up Study is not only set to deepen our understanding of genetic factors, but will also investigate why people with bipolar disorder are more likely to have an increased risk of illnesses like cardiovascular disease, asthma, diabetes, chronic pain and other conditions.



Autism

Expanding our research into autism

With Australia's prevalence of autism in children among the highest in the world, NeuRA's Laboratory of ImmunoPsychiatry, led by Dr Adam Walker, is expanding its research into the lifelong developmental disorder. The team's current work is focusing on the role of chronic stress, including non-invasive ways stress hormone levels can be measured in children with autism (such as hair samples).



Wellbeing and Resilience

Nature vs Nurture? It's a complex mix

The latest results from Associate Professor Justine Gatt's longitudinal TWIN-10 study revealed the complex interplay between genetics and environment in how our brains navigate emotion and cognition. By conducting functional MRI (fMRI) scans on twins, researchers uncovered how much of an individual's life experiences modulate certain brain processes, versus their biology. Understanding the areas of our brain function that link strongly to someone's environment – or 'nurture' – could play a key role in the development of personalised intervention approaches to promote higher mental wellbeing.

Translational Neuroscience

From pain management to spinal cord and motor vehicle injury, sleep apnoea to falls prevention, we focus on translating our research beyond the lab to directly benefit the health and lives of people everywhere.





Falls Prevention

Stepping up to success with smart±step

With a steadily ageing population, scalable and effective fall prevention strategies are needed to address the growing impact of falls in the community. A large randomised control trial led by Dr Daina Sturnieks found that smart±step, an at-home gamified step exercise program, was effective at preventing falls in people over the age of 65, reducing falls by 26 per cent when compared to a control group.



Spinal Cord Injury

Get-a-Grip community study launched by SCIRC

Fifty five percent of all spinal cord injuries result in tetraplegia: impaired movement and sensation of the arm, hand, leg and respiratory muscles. To combat this, researchers at NeuRA's Spinal Cord Injury Research Centre (SCIRC), in collaboration with Spinal Cord Injuries Australia and SpinalCure, have launched the Get A Grip community study in NeuroMoves gyms nationally to explore if transcutaneous spinal cord neuro-stimulation, combined with exercise training, can improve hand and respiratory function.

These rank as the highest functional recovery targets for people with chronic tetraplegia.



Injury Prevention

Female spine prototype a game-changer for injury research

Researchers at NeuRA's Transurban Road Safety Centre have developed a prototype lumbar spine that mimics a 12-year-old girl's, giving researchers a clearer picture of how vehicle collisions impact older children and small adult occupants. The spine was then installed in a crash test dummy and tested in four different seating positions – research that could help vehicle manufacturers improve their seat designs to reduce injuries, and help regulators and consumer crash testing programs better assess safety performance of vehicles.



Chronic Pain

Taking a cautious approach on analgesics for low back pain

According to the Royal College of GPs, musculoskeletal concerns are the second-most common reason for GP visits. A study led by Professor James McAuley looked at 69 different medicines or combinations of analgesic medicines including non-steroidal anti-inflammatory drugs, paracetamol, opioids, anticonvulsants, antidepressants, skeletal muscle relaxants and corticosteroids to compare their effectiveness for adults with acute low back pain. Using meta-analysis, it is the most comprehensive evaluation of its kind to inform clinical decision making.



Above: NeuRA researchers (back row) join over 200 participants in the 2024 Crusade for Connor fundraising run in Canberra, which built on the previous year's success and raised over \$82,500 to support schizophrenia research.

A shared crusade to fight the devastating effects of schizophrenia

Over the past year, we've been honoured by the deeply heartfelt fundraising campaigns run by people across Australia who have been touched by the conditions NeuRA researchers work to solve every day.

The Crusade for Connor campaign was launched to raise funds and awareness for schizophrenia research in memory of Connor Hogan, who was diagnosed with the disorder when he was 19 years old.

"He tried so many medications, most of which had debilitating side effects. He never got close to resuming a fulfilling life after the diagnosis," says Carolyn Hogan, Connor's mum.

Sadly, four years after the devastating diagnosis Connor took his own life.

"My hope is that research can find better treatments and improve quality of life for people who have schizophrenia. They need hope. It's a disease that tends to affect people when they're young – and we urgently need to do more to help them regain their lives."

Crusade for Connor: a beautiful legacy

From playing tennis for 24 hours to running multiple triathlons, "Crusade for Connor" is a week-long series of mental and physical challenges chosen by Connor's friends to reflect his adventurous spirit. "It created a beautiful legacy for Connor that I'll be eternally grateful for," said Carolyn.

In its first year, the group raised \$66,055 – more than six times their original goal – to honour Connor's memory and enable NeuRA's schizophrenia researchers to continue their vital work.

Professor Cyndi Shannon Weickert said the Crusade for Connor campaign was allowing NeuRA's researchers to capitalise on her team's discovery that brain inflammation can lead to schizophrenia.

"The support raised by this campaign is allowing us to test more affordable treatments – and hopefully halt abnormal brain function in schizophrenia by mitigating inflammation," said Professor Weickert.

Beyond the diagnosis:

Navigating MS and Parkinson's with hope

Emma Tinkler's life took a dramatic turn when she was diagnosed with Multiple Sclerosis (MS) at the age of 33. In the years following her diagnosis, Emma embraced two significant new roles: becoming a mother and a passionate advocate for MS research.

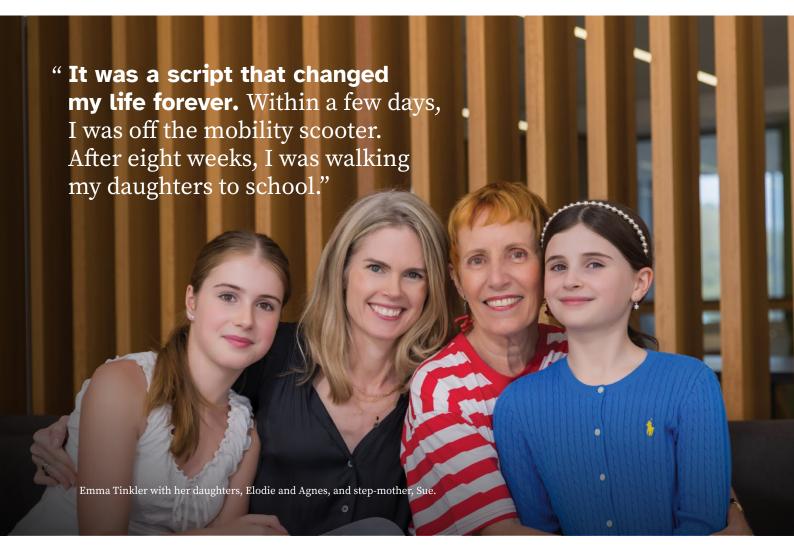
Over a decade after her initial diagnosis, Emma developed new symptoms, including difficulty walking and noticeable tremors which worsened to the point of needing a mobility scooter. After numerous specialist appointments, she received another life-altering diagnosis at the age of 45: early-onset Parkinson's disease.

Relieved to finally have answers, Emma started medication immediately. "It was a script that changed my life forever. Within a few days, I was off the mobility scooter. After eight weeks, I was walking my daughters to school. When you have Parkinson's, it's the simple things in life that feel like the biggest achievements," said Emma.

A self-confessed "fan girl of medical research," Emma has participated in two NeuRA studies; the MS Slip n Trip study looking at falls prevention in people with MS and the MUGgLE study, where she enrolled her daughters to help researchers understand muscle growth in children with and without cerebral palsy.

Today, with medical and family support, occupational therapy, a healthy diet and regular exercise, Emma's quality of life has improved.

Despite this, her health continues to have ups and downs. "And that's why I'm so passionate about medical research and funding research – so that we can give better treatment options, find the cures we need, and provide more certainty for those living with chronic conditions."



Standing up

for stroke patients

Ainslie Cahill AM is a woman who wears many hats: Member of the Order of Australia, Chair of the NHMRC's Consumer and Community Advisory Group, enthusiastic cook and a former secretary in the Lord Chancellor's Office, House of Lords.

But it was her experience seeing friends deal with a chronic autoimmune disease that set her on the path to becoming one of Australia's most successful consumer advocates.

"When a job came up with Arthritis Australia, I jumped at the chance to apply because I had two close friends living with rheumatoid arthritis and I saw firsthand what a tough life that could be," says Ainslie.

Over her 12-year tenure as Chief Executive Officer, she transformed the organisation into one that had people living with arthritis at its core – embedding consumers into the not-for-profit's research programs, and bringing them into Arthritis Australia's grant funding panels.

Now the leader of UNSW SPHERE's Consumer and Community Involvement and Engagement Strategic Platform, Ainslie is currently working with NeuRA's Professor Kim Delbaere and Dr Meghan Ambrens on StandingTall-Rehab: a digital rehabilitation program, that aims to improve physical mobility, quality of life and independence in patients recovering from stroke.

"For this project it's been vital to hear directly from people who have experienced a stroke, after they've left hospital, as well as their carers and the people who treated them while they were there," says Prof Delbaere.

"Ainslie has really helped us to make sure that how we approach consumers, and the questions we ask them, are all done in the right way."

So what does Ainslie ultimately hope effective partnerships between people with lived experience and researchers will achieve? "Research that's relevant, powerful and translatable" – a view shared by NeuRA's leadership, researchers and partners alike.



Financials

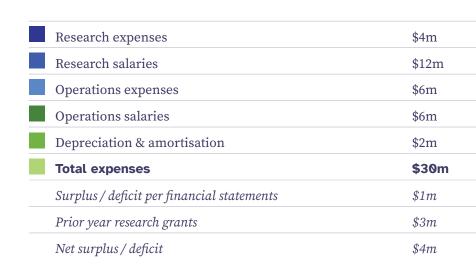
Income





Expenditure





Financial Position

Current assets - endowment fund	\$14m
Current assets - cash & others	\$30m
Non-current assets	\$54m
Total assets	\$98m
Liabilities	\$6m
Net assets	\$92m

Current Assets



Total*	\$44m
Other current assets	\$3m
Cash & bank balances	\$3m
Investments - available-for-sale	\$37m

^{*}Totals have been rounded up.

Governance

Board of Directors



Mr James MacNevin BA GAICD



Mr Barry Shepherd PSM GradDipPSM



Ms Cheryl Maley BSc, DipEd, MBA, GAICD



Prof Chris White MBBS BScMed PhD FRACP



Mr Clyde McConaghy BBus MBA FIOD FAICD



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Dr Jo Karnaghan MBBS, MBA, FRACMA



Dr Julian Adler MBBS(Hons) FRANZCR



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Mr Steve Tucker B Econ



Prof Sven Rogge PhD BSc

Alice Kase (until Mar 2023) Colin Tate AM (until Sept 2023) Debra Graves (until Aug 2023)

Foundation Board



Mr Steve Tucker B Econ



Ms Felicity Nicholson BComm



Mr Lee Valentine

Colin Tate AM (until Sept 2023)

Damien Mu (until Oct 2023)

Dave Sharma (until Nov 2023)

In Gratitude

Key supporters who made gifts of \$10,000 or more in 2023

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The Kinghorn Foundation The MacDonald Family in loving memory of Ruth MacDonald The Maple-Brown Family Foundation The Nick & Caroline Minogue Foundation The Nick Blair Memorial Fellowship The Oranges & Sardines Foundation The Peter & Barbara Hoadley Foundation The Russo Family in loving memory of Mrs Connie Russo The Tucker Family The Unsworth Foundation The Yarranabbe Foundation The Waterwheel Foundation Woollahra Golf Club Yulgilbar Foundation Yvonne Mee

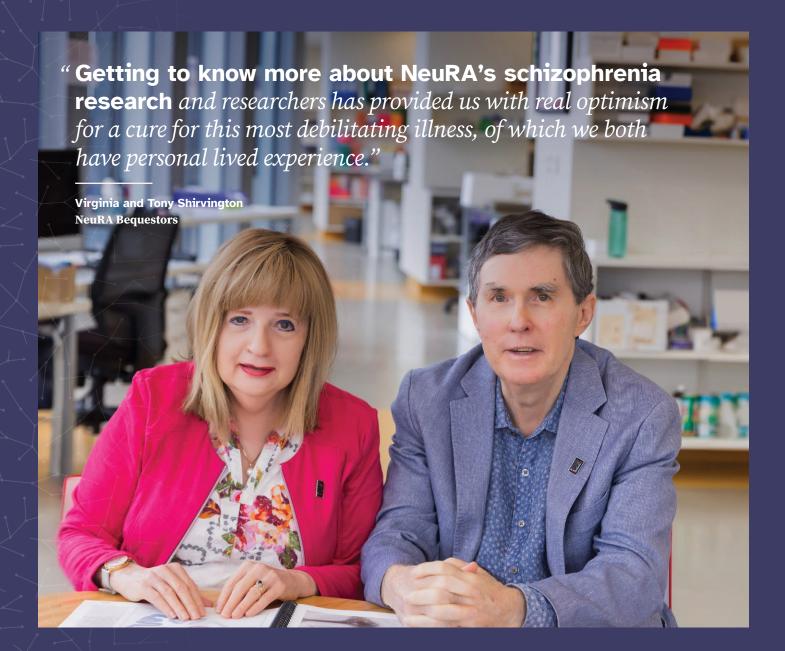
Corporate partners

Conexus Financial Herbert Smith Freehills Hicksons Lawyers Manuka Studio Philips Transurban

2023 Estates

The Estate of Samantha N Atkins
The Estate of June M Cather
The Estate of William Finighan
The Estate of Ian W Fitzpatrick
The Estate of John Gissing
The Estate of Francis M Hooper
The Estate of Anna L Ortega
The Estate of Stanley James Pendall
The Estate of Brenda Saltmarsh
The Estate of Reginald Stubbs
The Estate of Anne Tamvakis
The Estate of Marjorie Webb
The Estate of Olga M Woolger

The Hon Anna Katzmann



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