NeuRA
Discover — Conquer — Cure

NeuRA Forward 2025 to 2030

Tackling the brain challenges that shape our lives

Foreword

It is my great privilege to introduce the NeuRA Forward strategy, a transformative plan that sets the course for our Institute over the next five years. Neuroscience Research Australia stands at the forefront of brain research, driven by a mission to alleviate the burden of neurological and mental health conditions through innovation and collaboration.

This strategy reflects our commitment to excellence and impact. By focusing on lifelong brain health, innovative therapeutics, and precision diagnostics, we are aligning our efforts to meet critical healthcare needs while advancing scientific frontiers.

Our success depends on fostering strong partnerships—across academic institutions, healthcare providers, industry, and communities—enabling us to rapidly translate discoveries into clinical practice and societal benefit. NeuRA Forward also emphasises diversity, equity, and engagement, ensuring that our research benefits all populations, including First Nations people and underserved communities.

As Chief Executive, I am inspired by the passion and expertise of our team and partners, and confident that this strategy will guide NeuRA to new heights of achievement and influence.

I look forward to working alongside everyone committed to this vision and to forging a remarkable journey ahead.

Scientia Professor Matthew Kiernan AM
CEO and Institute Director

NeuRA Forward marks an exciting chapter for NeuRA, where science meets real-world impact to change how we tackle brain health challenges. As Director of Research, I see this strategy as a practical guide that focuses our strengths on the things that matter most: protecting brain health across every stage of life, smarter treatments, and better diagnostics.

Our brain is incredibly complex, and conditions like dementia, Parkinson's, and mental illness are still too often misunderstood or diagnosed too late. This strategy is about shifting that and using precision, innovation, and collaboration to get ahead of these conditions rather than reacting.

What sets NeuRA apart is our commitment to combining cutting-edge science with real clinical insights and lived experience. We're aiming for research that doesn't just stay in the lab but moves quickly into practice, helping people today and into the future.

This plan also reflects a broader responsibility to address equity in brain health, making sure our work benefits everyone, including those often overlooked and who need it most.

NeuRA Forward is about being bold, focused, and impact-driven. It's a blueprint for how we'll work together to push the boundaries of brain research and deliver outcomes that truly matter.

Dr Angus Henderson
Director of Research

Strategic missions

Protect brain health across the lifespan

To protect and support brain health at every stage of life and prevent loss of function wherever possible.

Maximise brain function

To lead the development of precision, science-based strategies that prevent loss of function and protect quality of life.

Advance precision brain diagnostics

To lead a new era of precision brain health using neuroscience, genomics, artificial intelligence (AI), and data-driven tools to detect problems earlier, and predict health outcomes to enable personalised care.

Strategic enablers

Leadership & Governance

A clear, accountable structure that empowers mission-focused teams to lead, partner, and deliver.

Talent & Capability

The right people with the right skills to deliver brain-focused innovation, prevention, and impact.

Culture & Values

A values-driven, collaborative, and impact-oriented workplace culture.

Platforms & Infrastructure

Shared systems, data, and facilities that power mission delivery.

Communications & Brand

A clear, compelling voice that strengthens NeuRA's reputation, builds public trust, and drives support for its research.

Measuring success

Scientific Excellence

Growth in high-impact publications, competitive research funding, and cross-sector collaborations.

Clinical Translation

Increased clinical trials, diagnostic tool adoption, and uptake of NeuRA research into policy, guidelines, and health service planning.

Community Impact

Improved public awareness, co-designed interventions, and measurable health outcomes in priority communities, including contributions to state and national policy.

Innovation and Commercialisation

Launch of spinouts or licensed products, expanded industry partnerships, and diversified revenue streams.

Organisational Strength

Strategic recruitment, mission-driven leadership, platform utilisation, and progress against annual mission targets.

Strategic missions

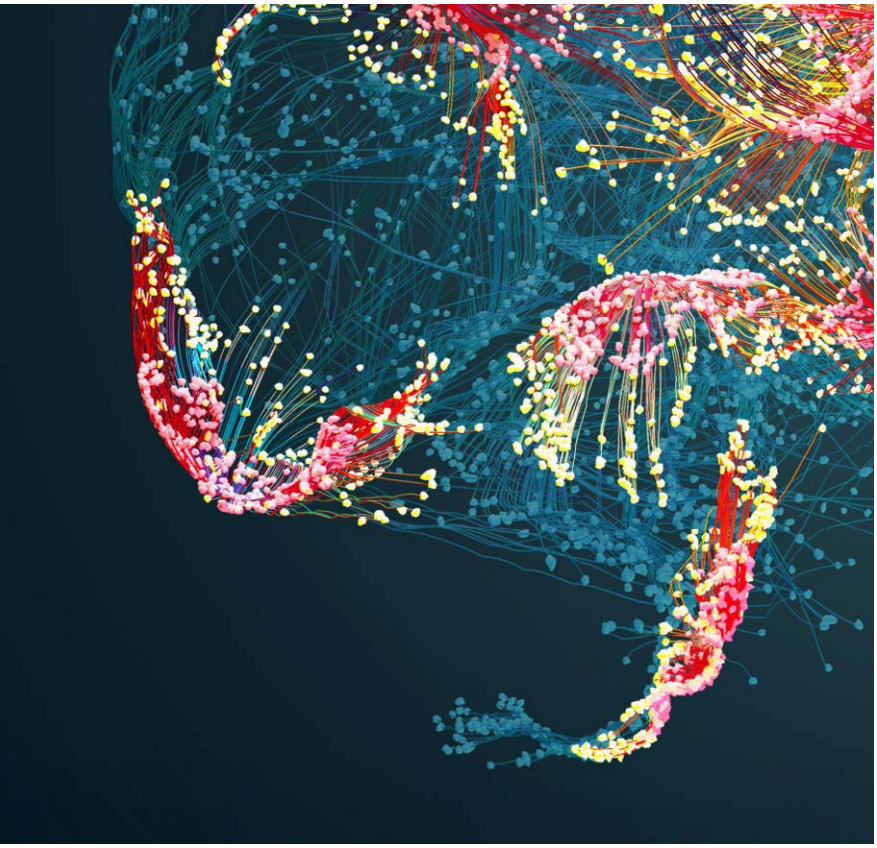
Mission 1
Protect brain health across the lifespan

The problem

Brain health is shaped from the earliest stages of life, and can be disrupted at any point by injury, disease, or social determinants. From neurodevelopmental conditions and rare neurological disorders in childhood, to cognitive decline and dementia in ageing, many individuals live with unmet needs across their lifespan. While these challenges often go unrecognised or untreated, many aspects of brain health are shaped by modifiable risk factors that can be targeted to support early intervention and prevention.

NeuRA's commitment

To protect and support brain health at every stage of life and prevent loss of function wherever possible. We will advance discovery and translational research into neurological conditions, prioritising early intervention, personalised care, and improved quality of life from pre-birth through to healthy ageing. We will work with our partners to introduce preventative strategies at the earliest possible time.



Impact focus

- Early brain development and neurodevelopmental disorders.
- Interventions to support lifelong cognitive health and prevent decline.
- Longitudinal studies on ageing, memory, and functional decline.
- Translational care models that adapt to life stage, biology, and lived context.
- Strategic partnerships with SESLHD, UNSW, and community organisations to scale support for individuals living with neurological conditions and their carers. These will align with UNSW's social impact strategy and SESLHD's Healthier Communities agenda and broader equity goals.

Melissa Nord and family

Key Actions

- Translate neurodevelopmental and ageing research into accessible tools, resources, and treatment options for consumers and clinicians.
- Develop and maintain registries or networks to promote neurological disease research and consumer support.
- Integrate cognitive screening and brain health promotion programs into community health services, in alignment with SESLHD's Healthier Communities goals.
- Launch public education campaigns and clinical resource hubs in partnership with SESLHD, UNSW, and professional bodies, focused on modifiable risk factors and early action.
- Partner with government agencies and policymakers to shape national and state strategies that promote brain health across the lifespan.
- Strengthen translational research and clinical trials focused on neurological diseases, developmental conditions, and cognitive health, through improved recruitment pathways and partnerships.
- Build sustained community partnerships, particularly with health promotion and Aboriginal health groups, to embed culturally safe prevention and care models into brain health research.

Case study

"Being told that there's something wrong with your child before they're even born is scary, there's no other word," says Melissa, mother of Mitchell, now aged two.

A routine ultrasound during her pregnancy with Mitchell had picked up a potential abnormality. Their specialist recommended to Melissa and her partner Adam that Mitchell's genome undergo sophisticated DNA sequencing.

Pathologists in the genomics program based at NSW Health Pathology and NeuRA – who are working in the Medical Research Future Fund PreGen program, to make genomic tests available for families in Australia's maternity centres – analysed the results of the sequencing and identified a rare genetic condition that would be life-threatening without immediate treatment at birth.

The detailed results were reported to the specialists in Victoria overseeing Melissa's care and as a result they recommended that Mitchell be born at a hospital in Melbourne, some four hours' drive from his family home, with the facility to provide the life-saving therapies at birth.

While he continues to visit hospital for treatment now, Mitchell's mother reports that he has met every milestone and continues to thrive.

"It still seems unreal, that it's possible to pick up such fine details in Mitchell's DNA and be prepared for his birth in a way that was literally life-saving," she says.

"I remember being so worried when we were first told, but the most important thing for us was to figure out how we would be ready and prepared for his birth."

"Knowing in advance what the issue was and how it was going to be treated meant we were able to give birth with the treatments available straight away."

Melissa says the early intervention possible because of the genomic testing changed everything.

"The science saved Mitchell's life."

Strategic missions

Mission 2
Maximise brain function

The problem

Declining brain health from ageing, neurological disease, or mental health conditions often leads to loss of mobility, chronic pain, and reduced independence. Reduced physical function often develops gradually, yet prevention and early intervention remain under-prioritised. Approaches are frequently fragmented and reactive, and do not address the neurological and cognitive causes of decline. As novel treatments, such as monoclonal antibodies emerge, healthcare systems must also be ready to deliver sustained, personalised care to those who need it.

NeuRA's commitment

To lead the development of precision, science-based strategies that prevent loss of function and protect quality of life. We will deliver integrated, evidence-based interventions, including digital tools, novel therapeutics, pain management strategies, and assistive technologies. Our goal is to keep people active, safe, and thriving in the environments where they live and age.

Impact focus

- Medical devices, brain retraining programs, and other neuroscience-informed interventions that start early and adapt to the person.
- Wearables, robotics, and assistive devices that support home-based monitoring and movement.
- Integration of emerging therapies, including immune-based treatments such as monoclonal antibodies, into real-world care models aligned with UNSW's precision medicine goals.
- Co-designed tools, services, and education programs delivered in partnership with SESLHD and community partners, including Aboriginal health services where relevant, reflecting the UNSW, SESLHD, and Randwick Health Innovation Precinct focus on implementing research into care.

Bree Antony

Key Actions

- Design and trial prevention-focused interventions with SESLHD that promote mobility, treat functional decline, and restore brain health.
- Expand clinical trial pathways for functional recovery interventions, ensuring real-world relevance and scalability, including the use of immune-based treatments such as monoclonal antibody therapies.
- Evaluate and trial wearable and assistive technologies with UNSW and SESLHD for early detection and patient support in home and community settings.
- Partner with clinicians, patients, carers, and communities to design inclusive, accessible education and self-management tools that reflect lived experience and practical care needs.

Case study

Bree was diagnosed with Complex Regional Pain Syndrome (CPRS) when she was 25, after accidentally dropping the metal arm of an electric toothbrush onto her foot.

CPRS is a rare but deeply debilitating condition. Bree says, "I experienced burning and stabbing sensations in my foot and it became so sensitive that I couldn't even put it in water in the shower. It was like walking on broken glass and I struggled a lot with swelling – I had to use crutches and stop wearing pants or enclosed shoes for four years. I couldn't sleep, which then has a domino effect on mood. I lost a lot of friends, I lost my partner".

Bree found an ad for NeuRA's MEMOIR trial online: "I liked the idea of trying something innovative while at the same time helping other people. The trial was implemented remotely, so I had no difficulties participating fully and greatly enjoyed the sense of having a community of professors, health professionals and staff around me who were so helpful". MEMOIR was a randomised trial, and Bree was in the arm which solely trialled a medication normally used to treat Alzheimer's disease. The other arm trialled mirror therapy and physiotherapy in addition to the medication.

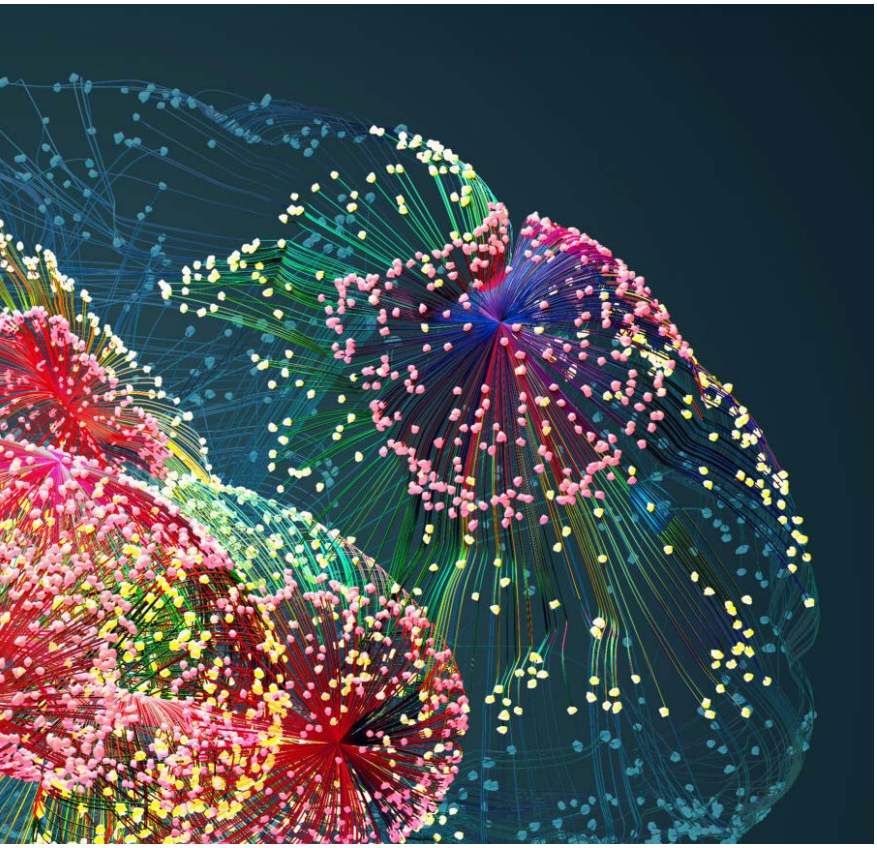
"I found the medication immensely helpful, with both my brain fog and my pain. So helpful I wish I could still take it today! There is no question that NeuRA's research has positively impacted my life: I would say, 100 per cent".

Strategic missions

Mission 3
Advance precision brain diagnostics

The problem

Despite advances in neuroscience, most brain and mental health care remains generalised and reactive. Conditions such as dementia, neurodegeneration, Parkinson's disease, motor neurone disease, mental health disorders such as depression and psychotic illnesses are often diagnosed too late and managed with one-size-fits-all approaches. Neurodegenerative and psychotic conditions share many common features but tend to be considered in isolation. We need smarter, more personalised solutions based on individual biology, clinical risk, and lived context.



NeuRA's commitment

To lead a new era of precision brain health using neuroscience, genomics, artificial intelligence (AI), and data-driven tools to detect problems earlier, and predict health outcomes to enable personalised care. We will work in partnership with clinicians, communities and industry to develop and translate tools, biomarkers, and personalised interventions that enable earlier diagnosis, better treatment decisions, and more effective prevention.

Impact focus

- Genomic and biomarker tools to detect neurodegeneration early.
- AI and imaging to personalise diagnosis and predict disease progression.
- Precision approaches for treatment of psychiatric and neurological conditions, aligned with UNSW's personalised medicine agenda.
- Cross-sector translation with UNSW, SESLHD, industry, and digital health innovators.
- Implementation of diagnostic innovations with clinicians across the SESLHD hospitals, Randwick Health Innovation Precinct, and research-active networks.

Dean Kizi
and family

Key Actions

- Invest with key partners in multi-disciplinary programs to develop genomic, imaging, and AI tools to better diagnose, manage and treat brain disease.
- Launch collaborative research programs with UNSW and SESLHD focusing on biomarker discovery and validation for neurodegenerative and psychiatric diseases.
- Strengthen clinical trial capabilities in precision neuroscience, including trials of biomarkers and diagnostics that can accelerate personalised interventions in hospital and community settings.
- Develop and pilot digital health platforms for early detection and monitoring, co-designed with clinicians to ensure clinical usability and workflow integration.
- Deliver targeted training programs for clinicians and researchers on precision neuroscience, diagnostics, and data analytics, in collaboration with UNSW and SESLHD.
- Formalise partnerships with key industry and health technology providers to support adoption, commercialisation, and clinical implementation.

Case study

Dean Kizi was a successful architect and newly married when he realised he couldn't stand on tiptoe on his right foot.

After physio failed to solve it, he had an MRI scan, blood tests, and trialled therapy – for five years no one could tell him why his muscles were beginning to waste, nor why he was increasingly weak.

Subsequent investigations into Dean's condition led to a particular genetic test, which showed that Dean had the familial SOD1 genetic mutation with approximately five other documented cases in the world – a mutation that had brought on a form of MND.

With clarification of his diagnosis, Dean and his wife began IVF with embryos that screening showed did not carry the SOD1 mutation. Two years later, the first of two healthy daughters was born.

The life expectancy for sufferers with MND is 2-5 years from onset of symptoms. Dean attends NeuRA for his ongoing care and the opportunity to participate in medical research.

For now Dean continues to work in the hope of leaving provision for his daughters, and tells them he loves them "a hundred times a day" because one day he won't be able to.

Strategic enablers

These five enablers underpin all three missions. They ensure that NeuRA has the people, systems, visibility, and culture needed to deliver on its missions with impact.

Leadership & Governance

A clear, accountable structure that empowers mission-focused teams to lead, partner, and deliver.

Key elements

- Mission leads with responsibility for performance and impact.
- Agile, cross-functional governance with direct partner input from UNSW, SESLHD, philanthropic partners, industry, and the community.
- Research Advisory Council to provide independent expert advice, guide strategic priorities, ensure research excellence, and actively support NeuRA to inform policy development at State and Federal levels.
- Align decision-making with mission outcomes and translational pathways.
- Ensure strong clinical input to guide priorities and accelerate translation into care settings with clear impact.

Talent & Capability

The right people with the right skills to deliver brain-focused innovation, prevention, and impact.

Key elements

- Recruit strategically across clinical and scientific domains to build the expertise required to deliver research excellence and real-world impact across each mission.
- Support early- and mid-career researchers to build outstanding careers.
- Enable interdisciplinary working across research, clinical, engineering, business, and community teams.
- Deliver training that strengthens clinical engagement, translational impact, and collaboration with healthcare partners.

Culture & Values

A values-driven, collaborative, and impact-oriented workplace culture.

Key elements

- Promote collaboration, curiosity, courage, and equity as core values.
- Foster a culture of partnership — internally and with health services, industry, philanthropy, and the public.
- Create space for diverse voices, lived experience, and community leadership in research.
- Celebrate success, learning, and adaptability across all levels of the organisation.

Platforms & Infrastructure

Shared systems, data, and facilities that power mission delivery.

Key elements

- Invest in core platforms: neuroimaging, data hubs, biobanking, wearable tech, and clinical trial units.
- Expand capabilities in genomics, AI, and digital health integration to support brain-related clinical research.
- Partner with UNSW, SESLHD, philanthropic foundations, and industry collaborators to leverage access to world-class infrastructure, equipment, and specialised facilities.
- Ensure platforms are accessible across disciplines and aligned to mission delivery.
- Build infrastructure for longitudinal cohort tracking, registries, and decentralised trials.

Measuring success

NeuRA will measure success through a combination of scientific, clinical, and societal outcomes aligned with excellence and the real-world impact of each mission.

Communications & Brand

A clear, compelling voice that strengthens NeuRA's reputation, builds public trust, and drives support for its research.

Key elements

- Position NeuRA as a national leader in brain research, grounded in clinical excellence and impact.
- Develop an integrated communications strategy that builds awareness among the public, clinicians, policymakers, donors, and partners, including translation of NeuRA's research into policy-relevant insights.
- Strengthen the NeuRA brand to attract philanthropic support and competitive funding.
- Empower researchers and mission leads to act as visible ambassadors for NeuRA's work and mission-driven science.

Scientific Excellence

Growth in high-impact publications, competitive research funding, and cross-sector collaborations.

Clinical Translation

Increased clinical trials, diagnostic tool adoption, and uptake of NeuRA research into policy, guidelines, and health service planning.

Community Impact

Improved public awareness, co-designed interventions, and measurable health outcomes in priority communities, including contributions to state and national policy.

Innovation and Commercialisation

Launch of spinouts or licensed products, expanded industry partnerships, and diversified revenue streams.

Organisational Strength

Strategic recruitment, mission-driven leadership, platform utilisation, and progress against annual mission targets.

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