The Brain Cancer Centre Annual Report

Many Minds. One Focus.

1 January 2025 to 31 December 2025

the brain cancer centre
MANY MINDS. ONE FOCUS.

Founded by Carrie's Beanies 4 Brain Cancer

Contents

Brain cancer is a devastating illness. Currently there is no cure. We need to change this.

Survival rates have barely changed in 30 years.

80% of patients diagnosed with brain cancer will die within 5 years.

One Australian is diagnosed with brain cancer every 5 hours.

Brain cancer kills more kids in Australia than any other disease.

Brain cancer kills more people under 40 than any other cancer.

Our impact

$30 Million

Committed to research and clinical trials

World First

Launched a world first clinical trial Brain POP

100+ Researchers

Working together to find new treatments

13 Projects

Funded research projects and clinical trials

17 Partnerships

Bringing together collaborative partnerships from across Australia

Establishing a world-class centre of excellence in brain cancer research.

Leveraging phenomenal talent, infrastructure and experience, The Brain Cancer Centre has committed over $30 million to fund highly impactful, collaborative research projects and clinical trials.

Bringing together the best medical research minds from around Australia and the world.

This is just the beginning.

Our Collaborators

The Florey Advancing Brain Research
Mark Hughes Foundation Centre for Brain Cancer Research
Menzies Institute for Medical Research
Monash University
murdoch children's research institute
RHH Royal Hobart Hospital
Peter Mac Peter MacCallum Cancer Centre Victoria Australia
The Royal Children's Hospital Melbourne
The Royal Melbourne Hospital
Telethon Kids Institute Telethon Kids Cancer Centre
The University of Adelaide
The University of Melbourne
The University Of Queensland Australia
VCCC Alliance Overcoming cancer together
WEHI brighter together

Sam McGuane

Four Years On: Strengthening a Shared Vision

This year marked four years since The Brain Cancer Centre's launch—a meaningful milestone that provided an opportunity to pause, reflect, and look ahead. What began as a collaborative idea has continued to grow into a connected research community, united by a shared commitment to improving outcomes for people affected by brain cancer.

This year was less about establishing the Centre and more about strengthening it. The foundations built in the early years - strong partnerships, shared leadership, and a culture of collaboration - are now supporting more coordinated research efforts and clearer pathways from discovery to impact. The Brain Cancer Centre is increasingly operating as a cohesive ecosystem rather than a collection of individual projects.

Throughout 2025, collaboration has remained central to everything we do. Researchers, clinicians and consumers continue to work together with a shared sense of purpose, reinforcing the belief that progress in brain cancer research is accelerated when expertise, infrastructure, resources, and lived experience are brought together.

As we look ahead, the focus is on building sustainably. With the ongoing support of our community, The Brain Cancer Centre is well positioned to deepen collaboration, strengthen long-term impact, and remain responsive to the evolving needs of the brain cancer community. The ambition remains unchanged - but we are now better equipped than ever to pursue it.

Thank you for your philanthropy, partnership, and continued belief in our mission. Your support continues to be fundamental to the Centre's growth and to our shared vision that one day, no lives will be lost to brain cancer.

Sam McGuane

Chief Executive Officer, The Brain Cancer Centre

Professor Misty Jenkins and Dr Jim Whittle

Shaping Direction Through Collaboration

In 2025, The Brain Cancer Centre's research program reached an important point of clarity and alignment. As Co-Heads of Research Strategy, we focused on strengthening collaboration to ensure the Centre's research is ambitious, coordinated, inclusive, and guided by a shared strategic direction.

A key milestone was the completion of the Brain Cancer Centre Research Strategy consultation with NOUS, a management consultancy. This process brought together researchers, clinicians and consumers to reflect on strengths, identify gaps, and define priorities. The outcome is a clear, collective direction, including defined strategic priorities, that will guide research decisions and investment in the years ahead.

Bringing people together remains central to the Brain Cancer Centre's approach. Our diverse and growing community of over 90 researchers, together with consumers, came together at the 2025 Annual Scientific Meeting. The meeting was redesigned to highlight early career researchers, integrate lived experience into scientific discussions, and showcase progress aligned with the Centre's strategic priorities.

With a clear strategy now in place, The Brain Cancer Centre is well positioned to translate direction into action, supporting high-quality, collaborative research that maximises impact for the brain cancer community.

We are deeply grateful for your ongoing support, engagement, and belief in our shared mission. Your connection to this work continues to strengthen the Centre and helps focus our efforts on delivering meaningful impact.

Professor Misty Jenkins AO

Laboratory Head, WEHI

Dr Jim Whittle

Laboratory Head, WEHI
Medical Oncologist, Peter MacCallum Cancer Centre

The year at a glance: 1 January 2025 to 31 December 2025

the brain cancer centre
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Founded by Carrie's Beanies 4 Brain Cancer

142 local, national and international **collaborations** are ongoing, a 27% increase from 2024

16 formal **partnerships** are ongoing, with 4 developed in 2025

12 clinical trials have been initiated based on BCC research, with 6 added in 2025

15 papers were published in internationally respected scientific journals in 2025, with a total of 80 manuscripts published since the opening of the BCC

124 scientific presentations were delivered, comparable to 2024 (126 presentations), bringing the total number of BCC-related presentations to 382 since opening

101 researchers are now part of the BCC, a 12% increase from 2024. This includes 27 early career post-doctoral researchers and 20 students

38 consumers have contributed to programs across the BCC, a **19% increase** from 2024

In 2025, the BCC received **$9,759,451** in research grants, with an additional **$1,643,961** in donations, along with **$1,550,000** from CB4BC, bringing the total funds received to **$12,953,412** for the year.

Since the opening of The Brain Cancer Centre, **$60,719,609** has been leveraged from the initial donation of **$10,000,000** from **CB4BC**

Research Program Updates – 1 January 2025 to 31 December 2025

Professor Kate Drummond
The Royal Melbourne Hospital

Professor Peter Gibbs
WEHI

Dr Lucy Gately
WEHI

BRAIN - Brain Tumour Registry Australia: Innovation and TraNslation

The BRAIN program is a vital part of Australia's brain cancer research effort. It helps us understand what we know, what we still need to learn, and where the greatest needs are for people affected by brain cancer. The program has three key parts:

1. Clinical Registry (BRAIN registry): Collects information about people diagnosed with brain cancer—how they're treated, how they respond, and what happens over time. This helps researchers and clinicians improve care and outcomes.

2. Tumour Sample Collection (BioBRAIN): Supports collection of fresh tumour samples from surgery to allow laboratory research using organoids (tiny models of brain cancer grown from real tumour samples). These help scientists test new treatments and understand how brain cancer behaves.

3. Patient Portal (BEACON registry) Gives people with brain cancer a way to share their lived experience, what symptoms they face, what matters most to them, and how their quality of life can be improved.

The BRAIN program continues to grow, bringing together consumers, clinicians, and researchers. Each year, it contributes to new discoveries through publications, conference presentations, and collaborative projects. The vision is simple but powerful: every person with brain cancer—whether through clinical data, tumour tissue, or lived experience—has the opportunity to shape the future of care, research, and hope.

Research highlights

- National Growth: We've expanded our reach, with more hospitals joining from Queensland, South Australia, and Western Australia. This means we're collecting more data from across the country, making our research stronger and more representative.
- Research Outputs: BRAIN contributed to one new scientific publication this year, adding to a total of six published studies. We shared our work through seven posters and two oral presentations at major conferences, winning Best Oral Presentation at COGNO, Australia's leading brain cancer research meeting.
- Lab Discoveries: We shared data with researchers to show that miniature brain tumours grown in the lab (called organoids) can help predict how a person's cancer might respond to treatment with temozolomide, a common chemotherapy drug. This could lead to more personalised treatment in the future.
- Consumer Engagement: Consumers have continued to play a key role in shaping our work, and together we have co-designed the BEACON registry.
- Data Collaboration: We've strengthened partnerships with other platforms allowing researchers to share data and work together more effectively, and are a founding member of the International Real World Evidence Glioma Council.
- Registry-Based Trial: We've begun collaborating on our second clinical trial that uses the BRAIN registry to track outcomes in real-world settings: a major step toward faster, more efficient research.

Goals for 2026

We will continue to build across our key goals:

1. **Increase National Engagement** – to involve more hospitals and researchers from across Australia—making sure the registry reflects the full diversity of brain cancer experiences and care settings.
2. **Explore Automated Data Linkage** – to securely and efficiently connect different types of data for research and sustainability.
3. **Assess Surrogates for Survival** – to investigate early markers that may help predict survival, so that care can be tailored sooner and more effectively.
4. **Evaluate the Human Impact of Glioma** – to explore how glioma affects people's daily lives, such as independence, work, relationships, and emotional wellbeing.
5. **Understand What Matters in Decision-Making** – to guide future tools and care pathways that reflect real-world priorities.

Professor Guillaume Lessene
WEHI

Professor Ben Hogan
Peter MacCallum Cancer Centre

Associate Professor Joseph Nicolazzo
WEHI

Associate Professor Kym Lowes
WEHI

Associate Professor Jeff Mitchell
WEHI

Dr Anne K Lagendijk
Institute for Molecular Bioscience,
University of Queensland

Dr Gabby Watson
WEHI

Blood Brain Barrier Program

Glioblastoma (GBM) is the most common and devastating brain cancer in Australia, with a 5-year survival rate of less than 6%. The brain is protected by a barrier (the blood brain barrier, BBB) that stops harmful agents penetrating this vital organ. However, the BBB also retains its characteristics in GBM patients and stops most anti-cancer drugs from reaching tumour cells. Historically, it has been challenging to develop drugs capable of crossing the BBB, with no new treatments approved in nearly 30 years.

We intend to develop carriers (nanobodies and peptides) to transport potent anti-cancer compounds across the BBB by hijacking natural transport mechanisms using a “Trojan-Horse” approach. Some of these novel drugs (BH3 mimetics) have been developed at WEHI, targeting key brain cancer vulnerabilities. We aim to develop novel clinical candidates ready for pre-clinical development. Ultimately, our goal is to deliver efficacious treatments, improving the survival and quality of life for GBM patients

Research highlights

In 2025, we have

- Identified fenestration and transcytosis (cargo agnostic transport pathways) as mechanism that could be leveraged to bring potent anti-cancer drugs through BBB.
- Developed nanobody-drug conjugates with improved BBB penetration as assessed in laboratory experiments.

Goals for 2026

Due to funding constraints, we will only pursue our work towards the development of a small number of novel nanobody-drug conjugates targeting the transferrin receptor. These will explore various linkers for tumour-targeted release.

Professor Misty Jenkins
WEHI

Dr Ryan Cross
WEHI

Professor Raelene Endersby
The Kids Research Institute Australia

Professor Lucy Palmer
The Florey, University of Melbourne

Dr Verena Wimmer
WEHI

Professor Kate Drummond
The Royal Melbourne Hospital

Brain Cancer Centre Immunotherapy Program

Through its innovative research, the BCC Immunotherapy Program presents a personalised approach to the development and translation of advanced immunotherapies for brain cancer. The mature program focusses on designing bespoke Chimeric Antigen Receptors (CARs) to enhance T cell immunotherapy for brain cancer, with the aim to realise bringing cell therapies into the clinic.

The overarching vision for the next five years is to spearhead groundbreaking advancements in immunotherapy, revolutionising the treatment landscape for brain cancer while unravelling the fundamental principles of rational and safe CAR T cell design.

This comprehensive research program involves:

Aim 1: Establishment of a pipeline of novel target antigen discovery.

Aim 2: Generation and functional testing of CAR T cell therapies for adult and paediatric high-grade glioma (HGG).

Aim 3: Investigation of the brain tumour microenvironment through immune profiling.

Aim 4: Generation of novel paediatric preclinical models to test therapy in physiologically relevant settings.

This strategic and targeted design approach to the development of CARs will be a major step towards the successful translation of CAR T cells for the treatment of brain cancers. These CAR T cells will then be able to be utilised either alone, or in combination with other therapies, to treat this deadly disease.

Research highlights

In 2025, the Jenkins Lab made major strides towards developing safer and more effective immunotherapies for brain cancer. Our team advanced the design of next-generation CAR T cells that can recognise multiple tumour targets. We established powerful new preclinical models of diffuse midline glioma (DMG) that faithfully mimic the disease seen in children, enabling us to test these therapies in realistic, immune-competent systems. The Jenkins Lab graduated another 2 PhD plus an Honours student this year, thereby training the next generation of brain cancer researchers.

We leveraged BCC funding to apply for a further 17 grants to support the wider program and gave more than 20 invited talks nationally and internationally on our program of brain cancer research, including being selected to speak in a plenary slot at the upcoming prestigious Society of Neuro-oncology meeting.

This year also marked the launch of BRAIINSTORM, a national program led by the Jenkins Lab to accelerate brain cancer immunotherapy—from AI-driven target discovery to clinical-grade manufacturing and clinical trials. Working closely with families and clinicians, our research is bringing cell therapy for paediatric brain cancer closer to the clinic, transforming scientific innovation into real hope for children and their families.

Goals for 2026

In 2026, the Jenkins Lab will build on our recent discoveries to take the next major step toward personalised CAR T cell therapy for brain cancer. Our focus will be on developing and testing a library of new CAR T cells designed to recognise unique markers found on glioma cells, allowing us to attack tumours precisely while sparing healthy brain tissue. Using cutting-edge tools such as real-time intravital microscopy, spatial proteomics, and whole-brain imaging, we will study how these immune cells behave within the brain's complex environment.

We aim to identify the most powerful CAR T cell candidates and uncover how brain tumours resist treatment—particularly through immune-suppressive cells at the tumour's edge. These insights will inform the design of smarter, safer, and more durable CAR T therapies, bringing us closer to effective, targeted treatments for both children and adults with high-grade gliomas.

Associate Professor Oliver Sieber
WEHI

Professor Peter Gibbs
WEHI

Dr Claire Storey
WEHI

Dr Lucy Gately
WEHI

Program for Organoid-Informed Precision Medicine for Glioblastoma

(Previously: Brain Cancer Organoids Program)

Glioblastoma is the most common brain cancer in adults. It has poor survival outcomes. Patients with glioblastoma have limited treatment options. Unfortunately, recent clinical trials have failed to make progress with new therapies due to a lack of cancer models for drug discovery that accurately mimic the patient's tumour.

This project aims to grow patient tumour tissue in the laboratory as miniaturised models called organoids that serve as faithful "tumour avatars" to improve personalised treatment for brain cancer. Organoids are combined with other models to facilitate drug screening, improving clinically relevant discovery of new treatments. Organoids can further be used to predict tumour drug responses, guiding the use of drugs in the clinic.

Our team is generating an organoid biobank to support therapeutic research of Brain Cancer Centre investigators. We aim to identify new treatments for patients by exploring new drug combinations and immunotherapies. Leveraging our clinical network, we anticipate taking newly identified therapies forward into organoid-informed clinical trials. Ultimately, we aim to see new therapies entering the clinic to improve outcomes for patients with brain cancer.

Research highlights

Our program has recruited 132 patients and opened its 5th hospital site. In 2025, we surpassed our recruitment target of 30 patients, enrolling 43 individuals. Alongside glioblastoma, we collected rare IDH mutant gliomas which are notoriously difficult to grow in the lab and were able to generate patient-derived organoids (PDTOs) for future studies. We are now aiming to improve how we grow these rare models to understand their biology and identify treatments.

This year, we tested how well our PDTOs could predict how patients respond to chemotherapy. Excitingly, we found that when standard chemotherapy limited the spread of PDTO cells, patients had a longer period before their disease progressed. This highlights the potential of PDTOs in predicting how patients will respond to treatment, giving clinicians a means to identify which therapy is most likely to benefit a particular patient.

In 2024, we developed a 3D cell-based model to search for new drug combinations for brain cancer. Early results were encouraging, and this year we took the next step—testing these promising treatments in patient-derived neurosphere models that mimic patient tumours. Our top drug combinations are now being screened in our most advanced PDTO models.

The future of brain cancer treatment will include multiple complementary approaches including surgery, chemotherapy, targeted therapies, radiation and immunotherapy. Immunotherapies, which boost the body's immune system to fight cancer, will play a key role. We are developing advanced models, including CAR-T/PDTO co-cultures and mouse models, to test these treatments in clinically relevant ways.

Goals for 2026

In 2026, we aim to strengthen and expand our translational brain cancer research program, which has already supported six BCC collaborative projects. We will establish and characterise new patient-derived tumour organoid lines, including rarer and treatment-resistant subtypes, to better represent the diversity of brain cancers. Using these models, we will continue to explore drug combinations with strong rationale for clinical translation and refine and validate immunotherapy (CAR-T) co-culture assays to identify promising cell therapies.

We will also deepen collaborations with clinicians and consumer advocates to ensure our research remains aligned with patient needs and clinical priorities. By the end of 2026, we aim to have a robust preclinical testing pipeline and new pre-clinical research data to help guide the development of next generation of therapies and clinical trials for patients with brain cancer.

Dr Sarah Best
WEHI

Dr Saskia Freytag
WEHI

Dr Jim Whittle
WEHI

Brain Cancer Research Laboratory

The Brain Cancer Research Laboratory (BCRL) is co-headed by a fundamental biologist (Dr Best), a bioinformatician (Dr Freytag) and a clinician (Dr Whittle), to bring a multidisciplinary focus to brain cancer research. The laboratory was established in 2021 and draws upon these complementary strengths to deliver a synergistic program of research, including:

Theme 1: Investigate the tumour and its microenvironment using spatial technologies to design better treatments.

Theme 2: Understand how tumours change in response to treatment and time to help target tumour progression at early stages.

Theme 3: Establish genetically engineered mouse models to study glioma development.

Theme 4: Identify new treatment options, particularly combination therapies, through the development of patient derived models and high throughput drug screening.

Theme 5: Develop novel clinical trials for patients with brain cancer.

Research highlights

In 2025, the Brain Cancer Research Laboratory made major advances in understanding and treating brain tumours. Our team published a landmark paper in Nature Medicine showing how a new drug that targets mutant IDH, a common gene change in low-grade glioma, affects tumour cells and may hint at why some patients respond better than others. We also developed powerful new spatial and computational tools that allow us to see how genes and metabolites are organised within tumours. These approaches are revealing how cancer cells interact with their environment and adapt to therapy.

Our researchers built more accurate laboratory and animal models of glioma that better mimic the human disease. These models will accelerate testing of new drug combinations and immunotherapies. Importantly, we helped establish the national Brain Cancer Data Initiative, which will bring together imaging, clinical and molecular data from across Australia to speed discovery through artificial-intelligence based analysis. This effort will expand in 2026 with new funding from Google Research. Together, these achievements move us closer to delivering faster diagnoses, smarter treatments and better outcomes for people living with brain cancer.

Goals for 2026

In 2026, the Brain Cancer Research Laboratory will build on the momentum of a breakthrough year. We will finalise and publish several landmark studies, including our spatial multi-omics work and low-grade glioma progression project, translating discovery into impact for patients. Our next step is to expand drug-screening across our patient-derived models to uncover new, more effective therapy combinations.

We will also launch the Brain Cancer Data Initiative, a national platform powered by Google Research, enabling artificial intelligence to connect imaging, clinical, and molecular data from across Australia. This will transform how brain cancer is studied and accelerate discovery. By completing these major initiatives and opening new clinical trials, 2026 will mark a turning point from discovery to delivery of real-world advances for people living with brain cancer.

Professor Mark Rosenthal
Peter MacCallum Cancer Centre

Professor Kate Drummond
The Royal Melbourne Hospital

Associate Professor Jordan R Hansford
SAHMRI

Associate Professor Jayesh Desai
Peter MacCallum Cancer Centre

Dr Jim Whittle
WEHI

Dr Claire Phillips
Peter MacCallum Cancer Centre

Brain-POP Program

Brain-POP is a world first perioperative, comprehensive, longitudinal treatment study in brain cancer. For decades, the development of new treatments for brain cancer has been hindered by clinical trial designs that have not addressed two fundamental questions:

1. Do drugs effectively reach the tumour?
2. Do they produce the expected anticancer effect?

With a $16M investment from the Victorian Government, Brain-POP will conduct innovative clinical trials which collect tumour samples both before and after treatment to answer these critical questions.

Over a five-year period, the program will focus on five key objectives, including:

1. Establishing key infrastructure to support clinical trials and brain cancer research.
2. Opening six clinical trials to test brain cancer treatment.
3. Expanding access to personalised cancer care.
4. Increasing the utilisation of clinical date in the BRAIN registry.
5. Boost the reputation, investment, and sponsorship of Victorian brain cancer clinical trials and research.

Research highlights

In 2025, BrainPOP strengthened its role as a leading brain cancer research program, improving patient care and accelerating new treatments. Since inception, the program has now supported more than 650 patients, enabled collaborations across two dozen clinicians and researchers, and contributed to over 23 presentations and 15 publications.

Important 2025 achievements include:

- Publication of two key clinical trials in Nature Medicine and the Journal of Neuro-Oncology, along with growing international recognition through frequent invited talks and conference presentations.
- Progressed multiple perioperative clinical trials: completing two, opening one and continuing development on three more. The program is on track to deliver 6 new trials in the initial funding period (2022- 2026).
- Feasibility of personalised medicine is now well established, with over 100 patients enrolled in the BrainPOP Precision biomarker study and routine integration of whole-genome tumour profiling in clinical practise. Lab partner Nexomics has developed an accredited custom genomic test meeting the MBS reimbursement requirements, so patients and clinicians can access this free of charge as part of routine care.
- Real world data collection infrastructure has been expanded through ethics approval of the BRAIN-SCAN imaging registry, enabling advanced radiology imaging research. The BRAIN clinical registry, now includes data from >9,500 patients.

Initial investment has been leveraged for more than $12.6M of competitive and philanthropic grant funding

Goals for 2026

1. Advance the clinical trial program by commencing recruitment on three studies ready for implementation and contracting with a pharma partner to securing the first industry investment in clinical trials.
2. Continuing to expand personalised medicine efforts, providing whole-genome tumour profiling for up to 100 patients and piloting new recruitment sites.
3. Publish research outputs, reporting analysis of the first 100-patient BrainPOP Precision patients and biological endpoints of completed clinical trials.
4. Demonstrate feasibility of research infrastructure by collecting and analysing imaging data in Brain-SCAN repository.
5. Increase visibility, awareness and promotion of the program through implementation of a communications strategy.

Professor Andreas Strasser
WEHI

Dr Professor Anne Voss
WEHI

Dr Diane Moujalled
WEHI

Evaluating novel drug combinations in brain cancer

(Previously: Cell Death and Cancer Program)

Brain tumours, particularly glioblastoma (GBM), are among the most aggressive and treatment resistant cancers. Current therapies offer limited survival benefit and often cause substantial toxicity to healthy tissues, severely affecting patients' quality of life. This underscores the urgent need for more effective and better-tolerated treatments.

In collaboration with Professor Guillaume Lessene, who leads research on overcoming the blood–brain barrier, we explored a novel targeted treatment approach for brain cancer. This approach uses very small antibody fragments, known as nanobodies, to carry a cancer-killing drug directly to tumour cells in the brain. Our treatment is designed to recognise a protein which is found at high levels on glioblastoma (GBM) cells. Once it reaches the tumour cell, it delivers a drug that blocks a protein that cancer cells rely on to survive. Encouragingly, the nanobody was able to kill brain cancer cells grown in a lab dish while not killing healthy brain cells. Further, we tested new anti-cancer drug combinations in mice to see how safe they might be. Our studies showed that a triple treatment strategy was well tolerated in mice. Together, these findings provide a strong foundation for future translational studies and highlight our commitment to developing innovative therapies that improve survival and quality of life for GBM patients.

Research highlights

Dr Moujalled's team has conducted extensive preclinical research using brain cancer cell lines, tumour cells obtained directly from patients, and mouse models of disease. Through these studies, her team has investigated new combinations of drugs aimed at disrupting the survival pathways that brain cancer cells use to resist treatment.

One of the key advances from this work has been identifying the specific proteins that control tumour cell death when a critical metabolic enzyme required for tumour survival is blocked. This discovery provides important insight into how therapies that target tumour metabolism can be combined with drugs that inhibit survival proteins to more effectively eliminate cancer cells.

Dr Moujalled recently submitted a scientific manuscript as senior author with Prof. Strasser, highlighting her leadership of an independent research program and her role in shaping the scientific direction of the project. The study represents a collaborative effort involving colleagues within The Brain Cancer Centre at WEHI as well as international research partners.

Goals for 2026

In 2026, Dr Moujalled and her team will broaden their brain cancer research program to include medulloblastoma, an aggressive form of brain cancer that primarily affects children. Using advanced laboratory models, the team will investigate the safety and potential benefits of new drug combinations, including approaches that pair these therapies with existing chemotherapy treatments. Their aim is to identify treatment strategies that are both more effective and less harmful for young patients.

For glioblastoma, the most common and aggressive brain cancer in adults, the team will apply cutting-edge technologies to study how patient tumours respond to therapy at the protein level. By examining these unique "protein signatures," the researchers hope to better understand why some patients respond well to treatment while others do not, and to uncover new weaknesses in tumour cells that could be targeted with future therapies.

The team will also continue to validate key discoveries from large-scale genetic studies to determine how certain cancer cells develop resistance to emerging treatments. These insights will help guide the design of more durable and effective therapeutic strategies.

Alongside this research, Dr Moujalled will share her findings at national and international scientific meetings and continue to build collaborations that strengthen and expand the impact of the research program.

Uncovering new genetic and epigenetic drivers of brain cancer

(Previously: CNS Cancers Tasmania Program)

Dr Owen Marshall
Menzies Institute for Medical Research

Professor Rosemary Harrup
Royal Hobart Hospital

Professor Joanne Dickinson
Menzies Institute for Medical Research

Brain cancer is a devastating disease with few effective treatment options. Our project aims to uncover the changes in our genetic material that cause these tumours. By studying Tasmanian families with a history of brain cancer, we hope to identify inherited genetic changes linked to the disease and test these in fast-acting animal models. Additionally, we are exploring how changes in gene regulation contribute to cancer, and testing drugs that might help prevent or reverse these changes.

Our research will contribute to the development of new, targeted therapies for brain cancer. We anticipate identifying new targets and potential drug treatments over the next year, forming the basis of future work, validating these findings in mammalian model systems. While the pathway to clinical trials is complex, our goal is to ultimately improve targeted treatments leading to better outcomes for patients. This work has the potential to benefit those affected by brain cancer in Tasmania and to positively impact brain cancer patients worldwide.

Research highlights

This year, our research has made two important advances towards understanding the fundamental causes of glioblastoma.

First, by using existing information on large Tasmanian families and Tasmanian Cancer Registry data, we have successfully identified several large families with multiple cases of brain cancer. We are now studying the DNA of members of these families to discover genetic changes that may contribute to their increased risk of developing brain cancer.

Secondly, using our specialised animal models of brain cancer, we have discovered that a critical genetic process, involving a protein complex called SWI/SNF, is essential for tumour growth. We found that switching off a key part of this complex dramatically slows cancer progression in our models. To understand why, we created a detailed map of how SWI/SNF works inside tumour cells. We found that in the earliest stages of our cancer models, this complex rewires the cell's activity, helping to switch on genes that drive tumour growth. Our research suggests that SWI/SNF is a key player from the earliest stages of tumour formation and potentially provides a promising new target for future drug development. These discoveries bring us closer to understanding what causes brain cancer, and how we might slow tumour growth or maybe even prevent it.

Goals for 2026

In the coming year, our goal is to build directly on our recent discoveries. We will expand our collection of Tasmanian families with multiple cases of brain cancer and identify the genetic changes that increase the risk of developing this disease. These genetic changes will then be tested in animal models to help us understand how they drive brain cancer development. Further, we will validate our top epigenetic 'hits' and expand our search for other members of the SWI/SNF complex that are involved in brain cancer. In addition, we will begin testing existing drugs that target these specific epigenetic complexes to see if they can stop or reverse tumour growth in our models. Our research will bring us a step closer to understanding, and ultimately treating, this disease.

Professor Kate Drummond
The Royal Melbourne Hospital

Professor Lucy Palmer
The Florey, University of Melbourne

Dr Heidi McAlpine
The Florey, University of Melbourne

The neuroscience of brain cancer: Investigations into the neuron-glioma synapse

(Previously: Dangerous networking: Brain tumours and the brain)

Brain cancer is unique as it is formed in the electrically active brain. Decoding the electrical activity and networking of brain cancer cells is central to our understanding of this complex and devastating condition. This project will discover the secrets of the electrical activity of brain cancer cells, and how those cancer cells integrate within neural networks in living human tissue. Our aim is to record from and manipulate brain activity to understand what impact this has on the growth and spread of these cancers. In doing so, we hope to unveil a whole new category of possible treatments that address the electrical communication between normal brain cells and cancer cells within the brain, which we believe is at the heart of the resistance of brain cancers to typical cancer therapies.

There have been inroads made in understanding the electrical activity of brain cancer using mouse models, which highlight the importance of this scientific pursuit, however, it has not been assessed in detail in human tissue, which is the only true representation of these tumours. Our work is at the forefront of this new and important arm of brain cancer research.

Research highlights

Over the past year, our research has led to exciting discoveries that are reshaping our understanding of how brain cancer interacts with the brain. We have shown that different classes of brain cancers, classified as low-grade and high-grade based on aggressiveness, exert distinct effects on neural activity. Overall, brain cells are more active in high-grade cancers which leads to greater tumour growth (Aim 1). Put simply, brain cancer hijacks the brain's own signalling pathways to feed its growth. This study is accepted for publication in Nature Neuroscience.

To uncover the genetic mechanisms driving this brain-driven cancer progression, our research efforts have also established a single-cell genomics platform (Aim 2). This powerful approach is the first of its kind in Australia and enables us to directly link the electrical properties of cancer cells with their gene expression profiles, providing unprecedented insight into the electrical and genetic diversity of glioma. Our work also contributed to an important clinical trial lead by CI Drummond and other BCC investigators which assessed the changes in brain cell excitability before and after treatment in patients with low-grade brain cancer (Aim 3). This study was published in Nature Medicine.

Together, these discoveries highlight the importance of our integrated neuroscience-based approach to understanding brain cancer, which spans from single-cell genetics to network-level brain function.

Goals for 2026

Together, our work over the past year has highlighted the imperative need to have a neuroscience-based approach to understand the mechanisms of how brain cancer infiltrates and interacts with the brain. Yet we are just at the tip of the iceberg in our understanding of this complex bi-directional interaction.

In 2026, our goals are high. We will continue to drive multiple layers of research projects, from genomics to direct electrophysiological recordings, to determine how brain networks are altered in different cancer grades and how these changes drive tumour growth. Based on our findings, we will also test identified neuroscience-based targets to assess their influence on cancer progression. This next phase of our research will advance our discoveries toward understanding how brain activity contributes to brain cancer, driving future strategies to improve treatment for people affected by brain cancer of all grades.

Mapping the brain's wound healing immune microenvironment after cancer surgery: An avenue for therapeutic intervention

(Previously: Developing and characterising unique paediatric brain cancer models to expedite clinical translation)

Associate Professor Raelene Endersby
The Kids Research Institute Australia

Professor Nick Gottardo
The Kids Research Institute Australia

Dr Saskia Freytag
WEHI

Professor Misty Jenkins
WEHI

Dr Brittany Dewdney
The Kids Research Institute Australia

Brain cancer kills more Australian children than any other disease, and survivors face lifelong side effects from toxic treatments. Safer therapies are urgently needed. Immunotherapy, which uses the immune system to fight cancers, shows promise in adult cancers with fewer side effects but remains ineffective for childhood brain cancers.

We have identified a new opportunity for immunotherapy success. Surgery can activate the immune system in other cancers; however, its impacts on childhood brain cancer is unknown. To study this, we have developed surgical brain cancer models in the laboratory that closely replicate the disease in a developing child.

In the short term, we will perform brain surgery on child-like mice with brain cancers to observe immune responses. Mid-term, we will test immunotherapies during surgery on these models. Long-term, we aim to bring these therapies to clinical trials, improving survival rates and quality of life for children with brain cancer.

Research highlights

Brain surgery is essential in treating brain cancer, but we still don't fully understand how the brain heals afterward, especially in children. Our research focuses on how the immune system responds after brain surgery, as we believe this is a unique chance to harness immune cells to attack cancer using an approach called immunotherapy. Immunotherapy has been incredibly successful in some adult cancers, but not yet brain cancer – and we are working to change that.

This year, we began by testing our surgical techniques in adult mice to ensure safety. Through careful studies, we found that mice around two weeks old are suitable for surgery, allowing us to move closer to models that reflect the children we aim to help. We plan to begin testing in these mice in early 2026.

In adult mice, we tracked how the brain's immune system reacts after surgery. Within a day, certain immune cells, called neutrophils rushed to the site but exited within 3 days. This was followed by an influx of different immune cells that help with wound healing. We also saw changes in brain-specific immune cells, called microglia. These cells changed rapidly following surgery and this altered behaviour persisted for nearly one month, showing how complex and long-lasting the healing process can be. In terms of non-immune cells, early results show that support cells in the brain (astrocytes) become active quickly and form a scar over time.

With BCC funding, we've gathered the tools needed to continue this work and optimised complex veterinary techniques. To understand these changes more deeply, we're also developing a custom tool to study important molecules involved in healing and are poised to generate more detailed data in 2026.

Goals for 2026

In 2026, we will use our refined brain surgery technique on mice with different brain tumours (glioblastoma) to resemble different patients. This will help us explore, for the first time, how tumour cells and immune cells interact during the healing process after surgery. We also aim to apply this technique to younger mice to show that the model is safe across different age groups. This will allow us to compare how the brain heals in children versus adults, and whether the immune response is different depending on age.

We also aim to begin pilot experiments testing the feasibility of an immunotherapy delivered in the brain during surgery. We will continue to work with BCC members to expand the surgical project as a pipeline for testing new therapies, bringing our therapeutic discoveries closer to clinical trials for brain cancer patients.

Associate Professor Andrew Morokoff
The Royal Melbourne Hospital

Professor Kate Drummond
The Royal Melbourne Hospital

Dr Jordan Jones
The Royal Melbourne Hospital

Dr Stephen Wong
The Royal Melbourne Hospital

ctDNA liquid biopsy for diagnosis and monitoring of glioma

(Previously: Glioma ctDNA-liquid biopsy program)

Brain cancers are driven by mutations in DNA genes and testing for these specific mutations in each patient is absolutely critical to understand the type and grade of tumour, it's predicted behaviour, and the best treatment to give. Currently the only way to get this molecular information is by doing a surgical biopsy to get tissue from the tumour itself.

We have been developing accurate methods to detect glioma DNA mutations in the blood via a simple non-invasive blood test that can catch mutations that sometimes are missed during a surgical biopsy. This means that in future we could tell what type of tumour a patient has without needing a brain surgery operation at all, or we can predict when a tumour is growing back early, or tell when the chemotherapy has stopped working and another drug should be tried.

Ultimately, we are working on a blood test that can help choose a personalised targeted therapy or confirm eligibility for exciting new immunotherapies like CAR-T. Clinical trials are planned in the next 12 months and real-world outcomes expected in 5 years.

Research highlights

We showed that liquid biopsy using digital PCR and next generation sequencing of blood samples in glioma is a valid and useful way to get diagnostic gene mutation information. We discovered that IDH1 mutation and other mutations could be found in the blood with high sensitivity. We published this work in two papers in a high impact journal (Neuro-oncology Advances). We disseminated the results of this work to the BCC as well as a wider audience at several scientific meetings including the Neurosurgery Society of Australasia and the Neuroscience Society of Australia.

Goals for 2026

While taking a pause on panel-based sequencing, we aim to focus on developing a multiplex digital PCR approach for mutation detection. This will primarily focus on IDH1/BRAF mutations for diagnostic purposes as well as potentially paediatric gliomas with H3K27M and will be co-developed with CI Wong.

Fellowships and Scholarships

Greg Lange Fellowship

Dr Zachery Moore WEHI

Zac Moore is a research officer within the Brain Cancer Research Laboratory. His research is focussed on establishing a multifactorial drug-identification pipeline centred on glioblastoma. Zac was awarded a three-year fellowship at $150,000 per annum, funded by The Greg Lange Memorial Education Fund in honour of Greg Lange. This fellowship commenced 15 August 2022, concluding on 15 August 2025

Research highlights

Over the past year, Zac made significant strides in characterising patient-derived neurosphere models. These are cellular models that are made using glioblastoma tissue directly from surgery. These models reflect patient characteristics and enable us to investigate drug responses.

Zac has published his research comparing glioblastoma models used for drug studies, which will help the research field better understand the differences and similarities between models. This research used advanced molecular and genomic studies, which was possible due to Zac's ability to work coherently in both the wet and dry labs. This was published in January 2026 in the journal Neuro Oncology Advances.

Furthermore, in 2025, Zac worked on improving the pipelines and methods of drug screen readouts, to advance the quality of understanding drug responses. Zac has written a software package called incur to help analyse drug screen data. Working with collaborators at the Dana Farber Cancer Institute (USA), Zac has put together a manuscript to share the package with the scientific community to enable others to leverage his work.

Presentations

- Invited Oral presentation **Organoid Meeting Group** (December 2025) Development of an end-to-end screening platform for glioblastoma neurospheres
- Poster presentation **ABCARA scientific conference** (September 2025) Therapeutic repurposing reveals novel interventions for heterogeneous glioblastoma Award: Best poster at the conference.
- Invited Oral presentation **ONJCRI Seminar Series** (October 2025) Therapeutic repurposing reveals novel interventions for heterogeneous glioblastoma
- Poster presentation **EANO** (Prague, October 2025) Therapeutic repurposing reveals novel interventions for heterogeneous glioblastoma **Award:** CASS Travel Award to support attendance at the conference ($4,000 AUD).
- Oral presentation **Functional High Throughput Technologies Australia** (November 2025) incur: IncuCyte Analysis and Cell Line Authentication Tools for R

Publications

K. Drummond, M. Spiteri, S. Cain, J. Jones, S. Shaya, M. Topp, T. Lu, R. Tobler, A. Valkovic, **Z. Moore**, …, S. Best*, S. Freytag*, J. Whittle*. Perioperative IDH inhibition in treatment-naïve IDH mutant glioma: a pilot trial. Nature Medicine, 31:3451–3463 DOI: 10.1038/s41591-025-03884-4.

Z. Moore, C. Storey, D. Brown, A. Valkovic, M. Spiteri, J. Pignatelli, S. Oliver, A. Fakhri, K. Drummond, S. Malinowski, K. Ligon, O. Sieber, J. Whittle*, S. Freytag*, S. Best* (2025) Three-dimensional patient-derived models of glioblastoma retain intra-tumoral heterogeneity. Neuro Oncology Advances, 2026.

Fellowships and Scholarships

Dine for a Cure Limited and RMBL Foundation Fellowship

Dr Diane Moujalled WEHI

Diane Moujalled is a Senior Research Officer in the Lessene laboratory at the Walter and Eliza Hall Institute of Medical Research (WEHI). Her work focuses on understanding how aggressive brain cancers such as glioblastoma resist treatment and identifying new drug combinations to overcome this resistance. Using patient tumour samples and advanced laboratory models, her research aims to develop more effective therapies for people with brain cancer.

Diane was awarded a three-year fellowship at $150,000 per annum, funded by The RMBL Foundation in partnership with Dine for a Cure. This fellowship commenced in January 2025.

Research highlights

Diane has carried out extensive laboratory testing using brain cancer cell lines, tumour cells taken directly from patients, and mouse models of disease. These studies have focused on testing new drug combinations designed to disable the survival mechanisms that brain cancer cells rely on to withstand treatment.

A major recent advance from her work has been the mechanistic identification of the key proteins that govern tumour cell death in response to inhibition of a critical metabolic enzyme that supports tumour survival. This discovery provides crucial insight into how metabolic targeting can be combined with inhibitors of survival proteins to more effectively trigger tumour cell death.

Recently, Diane submitted a scientific manuscript as senior author, demonstrating her leadership of an independent research program and her role in guiding the scientific direction of the work. This study was a collaborative effort with researchers within the Brain Cancer Centre at WEHI and with international collaborators.

Goals for 2026

In 2026, Diane and her team will build on their brain cancer research program by expanding their work into medulloblastoma, a highly aggressive childhood brain cancer.

Her team will evaluate the safety and effectiveness of new drug combinations in advanced laboratory models of medulloblastoma, including in combination with standard chemotherapy treatments. The goal is to identify safer and more effective therapeutic strategies for children affected by this devastating disease.

For adult brain cancer (glioblastoma), the team will apply advanced technologies to analyse the unique “protein signatures” of patient tumours in response to therapy. This work will help explain why some patients respond well to treatment while others do not and will uncover new vulnerabilities that can be targeted therapeutically.

The team will also continue validating key findings from large-scale genetic studies to better understand why certain cancer cells resist new treatments, helping to guide the development of more durable and effective therapies.

In addition, Diane will present her research at national and international conferences and continue to foster collaborations to strengthen and expand her research program.

Dine For A Cure – PhD scholarships

Dine for a Cure is a Melbourne-based committee of volunteers who have all lost loved ones to brain cancer. The group formed in 2011, determined to do something to raise much-needed funding for brain cancer research. To date they have raised over $1.6 million for crucial brain cancer research in Australia.

Dine for a Cure is supporting students in The Brain Cancer Centre - the next generation of brain cancer researchers to receive mentoring, training and participation through PhD scholarships. Progress in brain cancer research requires people to drive the breakthroughs and these scholarships support and attract some of the brightest and most promising future leaders, building an ecosystem of researchers to make an impact in the coming decades.

Krishneel Prasad — Recipient of the Ann Henderson Scholarship
PhD scholar in the laboratory of Professor Misty Jenkins, WEHI

Krishneel commenced his PhD in the Jenkins laboratory in 2023. The focus of his research explores how Chimeric Antigen Receptor T cell (CAR T cell) therapy, an immunotherapy, can be made safer for patients with brain cancer. This therapy utilises a patient's own immune system, their T cells, and engineers them to provide a potent anti-tumour response when re-delivered back into the patient.

Krishneel is applying new innovations in the synthetic biology field so that these engineered T cells must follow pre-defined rulesets prior to tumour killing. Doing so prevents the therapy mistakenly targeting healthy cells and restricts the therapeutic effect to the brain tumour. In addition, CARs that can be regulated using a small molecule drug are also being explored. Achieving this would broaden the suite of brain tumour targeting CAR T cells that can be feasibly designed. Together, engineering a smarter T cell would mean safer immunotherapies for patients.

Leesa Lertsumitkul — Recipient of the Frank Montague Scholarship
PhD scholar in the laboratory of Professor Misty Jenkins, WEHI

Leesa commenced her PhD in the Jenkins Laboratory in 2022. The focus of Leesa's PhD is to develop new immunotherapies to treat both adult and paediatric brain cancers. These targeted therapies can be designed to specifically kill cancer cells without harming surrounding healthy tissues. Leesa's research uses patient samples that have been generously donated to research, allowing her to assess these treatments in different experimental models. The goal of her research is to develop more effective and safer treatments for patients.

Pranav Runwal PhD scholar in the laboratory of Associate Professor Joseph Nicolazzo, Monash Institute of Pharmaceutical Sciences & Dr Gabby Watson, WEHI

Pranav commenced his PhD in 2023. The focus of Pranav's PhD is to develop more effective treatments for gliomas, a highly aggressive and common form of brain cancer that often resist conventional treatments. One contributing factor is the blood-brain barrier (BBB), a protective mechanism that shields the brain by limiting the entry of substances from the bloodstream. As a result, when a brain cancer patient receives medication, only a fraction crosses the brain to reach the tumour site.

Pranav aims to develop nanobodies - tiny proteins that specifically target a receptor on the BBB capable of naturally enabling the transport of molecules into the brain. These nanobodies are thus able to take a "Trojan horse" approach enabling them to be efficient transporters of a drug across the barrier and into the brain where the tumour resides.

Luc Marsden PhD scholar in the laboratory of Professor Lucy Palmer, Florey Institute, University of Melbourne

Luc started his PhD under the supervision of Lucy Palmer and Kate Drummond in 2024, where he is investigating the neuroscience of brain cancer. Human brain cells are known to communicate with cancer cells, which directly drives cancer growth and worsens patient prognosis.

Luc's study investigates this so-called 'neuron-glioma synapse', to discover which cancer cells receive input from neurons, leading to a greater understanding of how this in turn drives tumour growth. The goal of his research is to disentangle the neuron-glioma synapse, to reveal previously unrealised targets for efficacious treatments to prevent cancer progression throughout the brain.

The Symons Family Charitable Trust – Gregg Symons PhD Scholarship

Dr Oluwaseun Fatunla PhD scholar in the Brain Cancer Research Laboratory, led by Dr Sarah Best, Dr Saskia Freytag, and Dr Jim Whittle, WEHI

Oluwaseun Fatunla is a talented anatomical pathologist from Nigeria with a keen interest in brain cancer stemming from his experience in clinical practice. He started in the Brain Cancer Research Laboratory in October 2022 after receiving a prestigious International PhD Scholar Initiative (IPSI) scholarship to commence a PhD at WEHI.

He was awarded a PhD scholarship from The Symons Family Charitable Trust in memory of Gregg Symons.

Oluwaseun's project is focused on identifying the molecular alterations that take place during the progression from low grade to high grade glioma (GBM), which utilises his skills as a trained pathologist. His project aims to reveal specific factors that drive aggressive disease, in order to better understand the mechanisms occurring within these tumours. This will enable him to pursue additional avenues leading to potential future research impacts including early detection and diagnosis of glioma and identification of therapeutic targets to improve treatment and disease outcomes for patients.

In 2025, Oluwaseun completed the experimental portion of his PhD research. He identified genomic changes (methylation alterations) associated with more aggressive gliomas. Next, Oluwaseun established a new pipeline in the laboratory to examine the tumour environment and determine alterations specific to more aggressive disease. He found specific changes in immune response to tumours that progress to more aggressive glioma. Together, Oluwaseun has found multiple indicators that could be used to predict disease outcomes for lower grade glioma patients.

Toward the end of 2025, Oluwaseun delivered his PhD completion seminar, an important academic milestone, and focused on preparing his PhD thesis for submission in early 2026. Following completion of his formal PhD training, Oluwaseun will pursue clinical career interests in 2026, however will remain connected to the laboratory whilst he awaits his PhD thesis examination.

Publications

PhD Completion Seminar (12 September 2025)
Determining markers of progression and poor survival in lower grade glioma

Publications

K. Drummond, M. Spiteri, S. Cain, J. Jones, S. Shaya, M. Topp, T. Lu, R. Tobler, A. Valkovic, Z. Moore, **O. Fatunla**, …, S. Best*, S. Freytag*, J. Whittle*. Perioperative IDH inhibition in treatment-naïve IDH mutant glioma: a pilot trial. Nature Medicine, 31:3451–3463 DOI: 10.1038/s41591-025-03884-4.

J. Kriel, J. Moffet, T. Lu, **O. Fatunla**, V. Narayana, A. Valkovic, A. Maluenda, M. McConville, E. Tsui, J. Whittle*, S. Best*, S. Freytag* (2026) An integrative spatial multi-omic workflow for unified analysis of tumor tissue. Cell Reports Methods, 6:2 DOI: 10.1016/j.crmeth.2026.101306

Guthrie-Reardon PhD Scholarship

Lucy Riley PhD scholar in the Brain Cancer Research Laboratory, led by Dr Sarah Best, Dr Saskia Freytag, and Dr Jim Whittle, WEHI

Lucy is a PhD student who previously worked as a clinical trial coordinator within the BrainPOP program. She has held roles across The Royal Melbourne Hospital, Peter MacCallum Cancer Centre, and Royal Women's Hospital, with experience spanning operating theatre settings and clinical trial delivery. She completed a Bachelor of Science, majoring in immunology and a Master of Science in epidemiology, both at the University of Melbourne.

Lucy is passionate about improving cancer care through genomics, with an emphasis on equitable access to advances in precision medicine.

She was awarded the Guthrie-Reardon PhD Scholarship thanks to generous funds raised by the FITE Brain Cancer Ball. This PhD scholarship will support her studies for 3.5 years.

Lucy's project is focused on improving genetic testing for brain cancer patients to improve treatment and related therapeutic outcomes.

There are more than 120 types of brain cancer, ranging from non-threatening to very serious, so it is important to have accurate tests to guide treatment. Genomic testing, which looks at the genes in cancer cells, is a key tool for diagnosing and treating brain cancer. To make good healthcare decisions and set effective policies, it is important to understand the cost-effectiveness of different types of genomic tests.

Through funding by the Victorian Government (BrainPOP), the Brain Cancer Research Lab (BCRL) team is undertaking genomic testing for all brain cancer patients treated at the Royal Melbourne Hospital. In this project, we will examine the economic impacts of genomic testing and compare various methods, including whole-genome sequencing, gene panels, and advanced point-of-care tests.

The goal is to provide recommendations for healthcare policies regarding which genomic testing methods to use for brain cancer. As such, this work represents the final evaluation of the BrainPOP program as well as its extension to advanced point-of-care testing.

The Brain Cancer Centre Charity Partners

Thank you to our wonderful charity partners for their passionate and tireless support and for being such a vital part of The Brain Cancer Centre community. The impact of their generosity is felt every single day – in our labs, in our research, and in the lives of those living with brain cancer.

Cure Brain Cancer for Stevo

Lachie Stephenson was just 20 years old when he lost his battle with Diffuse Midline Glioma. His battle only lasted 7 months. He fought hard but it was just too big to win. He endured surgery, radiation and a clinical trial. This was the same treatment used for this type of tumour in the 1960's; there have been no medical advances in more than 60 years.

His family are determined to raise funds so that one day no family has to go through the devastation they have. To date they have raised over $96,000.

Flicker of Hope Foundation

Con and Anne Petropoulos established the Flicker of Hope Foundation in 2018 to support research into Neurofibromatosis (NF). Their daughter Zoe was diagnosed at 4 months, and tragically, their daughter-in-law Elizabeth passed away in 2023 from NF-related brain cancer. The Foundation funds Dr Jim Whittle's NF2 research project, 'Elizabeth's Legacy', to develop new therapies and early diagnostic markers.

Laurie's Love

Laurence Pavone was diagnosed with stage 4 brain cancer in 2018 at the age of 41. Together with his wife Julie, they established Laurie's Love to raise funds for brain cancer research and awareness. Laurence passed away 10 months later, but his legacy continues. To date they have raised over $420,000 for The Brain Cancer Centre

The Brain Ball

Started in 2021 by Emily, Jessie, Nadine, and Kelly, The Brain Ball hosts an annual fundraising event and has supported The Brain Cancer Centre for the 3 last years and has raised over $192,000.

Cowboy Hats for Kate

Established in honour of Kate Day, who passed away after a four-year battle with brain cancer, Cowboy Hats for Kate raises funds through the sale of bespoke hats and merchandise. Proceeds support vital brain cancer research and improve outcomes for patients and families. They have raised over $163,000.

Dine for a Cure

A Melbourne-based volunteer committee, all of whom have lost loved ones to brain cancer, Dine for a Cure raises funds through its annual Gala Dinner. They have raised over $786,000 for The Brain Cancer Centre to date

Hugo Long Sunshine Fund

Hugo's parents, Ollie and Brooke Long, lived every parent's worst nightmare when their baby boy Hugo was diagnosed with a fast-growing and highly aggressive tumour.

At only 11 weeks old Hugo was diagnosed with Atypical Teratoid Rhabdoid Tumour (AT/RT) brain cancer, which is only found in children, mostly under 3 years old. It is a rare, aggressive and malignant disease with no cure. Hugo spent 7 months undergoing high dose chemotherapy in hospital and battled the life-limiting side effects before passing away aged 21 months in April 2024.

"The Hugo Long Sunshine Fund was established because no child should have to endure what our precious Hugo did in his short life", his parents Ollie and Brooke said. The Hugo Long Sunshine Fund has since raised over $268,000 for the BCC.

Max's Cast for a Cure

Max was just 5 years old when he passed away, following a brave fight with Ependymoma. Max's family wants to see a day where no other family needs to go through what they've had to. They started 'Max's Cast for a Cure' as they're determined to help fund vital research to change the statistics for paediatric brain cancer. To date, they have raised over $160,000 for the BCC.

Collaborations

The power of collaboration accelerates discoveries and will ultimately bring us toward ending brain cancer as a terminal illness. Here is our eco-system of research.

USA / Canada

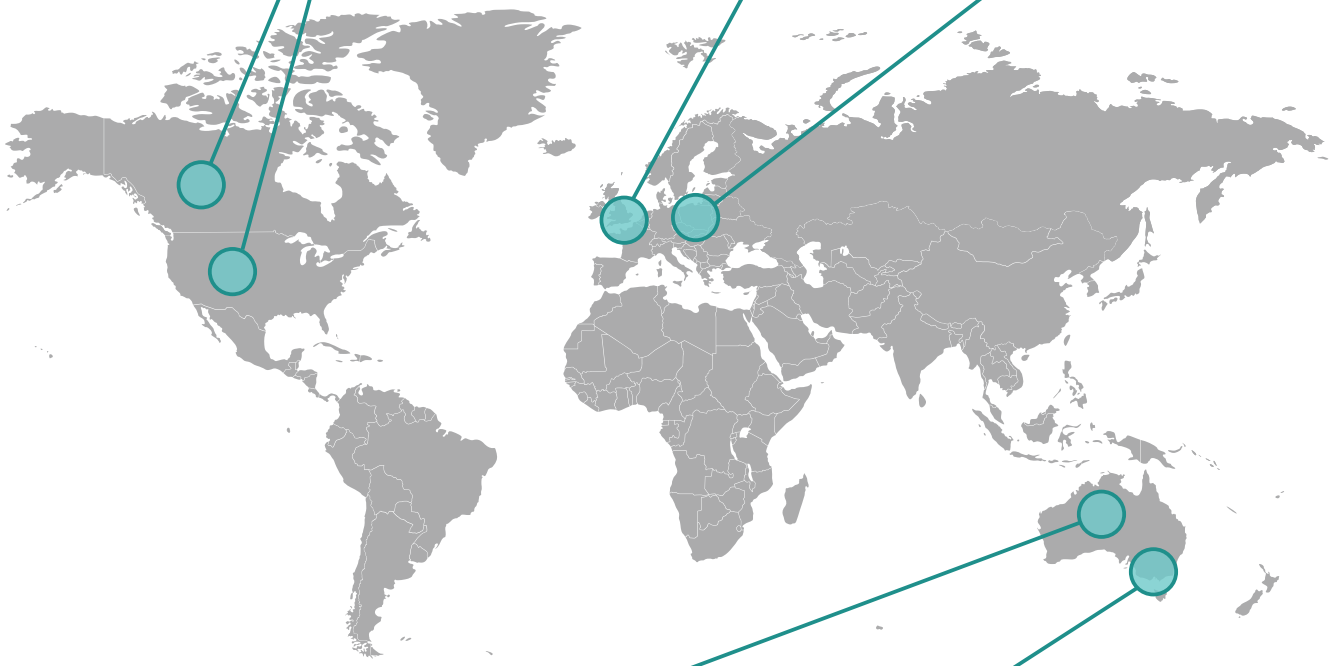
- Allen Institute for Brain Science
- Cleveland Clinic
- Dana-Farber Cancer Institute
- Duke University x 4
- Genentech
- The International Consortium on Meningiomas (ICOM)
- Mayo Clinic
- McGill University
- Nuvation Bio
- Seattle Children's Hospital & Research Institute
- St Jude Children's Research Hospital
- Stanford University
- Twist Bioscience x 2
- University of Cincinnati x 2

UK

- Cancer Research UK Cambridge Institute x 3
- University of Leeds
- Wolfson Childhood Cancer Research Centre

Europe

- EpiQMAx / MoleQlar Analytics
- Oslo University Hospital
- Brain Liquid Biopsy Consortium
- University of Erlangen-Nuremberg



Australia (National)

- Arovella Therapeutics
- Calvary Mater Newcastle
- Children's Brain Cancer Centre
- Children's Cancer Institute
- CSIRO
- Curtin University
- Flinders Medical Centre
- GenesisCare
- GLIMMER
- Hunter Medical Research Institute x 2
- Mark Hughes Foundation Centre for Brain Cancer Research
- Newcastle Private Hospital
- QIMR Berghofer
- Queensland Children's Tumour Bank
- Royal Hobart Hospital x 4
- South Australian Health and Medical Research Institute (SAHMRI) x 2
- Sir Charles Gairdner Hospital
- The Kids Research Institute Australia x 5
- Toowoomba Hospital
- The University of Adelaide
- The University of Newcastle x 2
- The University of Queensland x 4
- University of South Australia x 2
- The University of Sydney x 2
- WEHI

Australia (Victoria)

Metro

- Alfred Hospital x 3
- Cabrini Health x 3
- Cancer Melbourne
- Epworth Richmond
- The Florey Institute of Neuroscience and Mental Health x 3
- Hudson Institute of Medical Research
- Melbourne Health
- Metabolomics Australia
- Monash Health
- Monash Institute of Pharmaceutical Sciences (MIPS) x 4
- Monash University x 2
- Murdoch Children's Research Institute (MCRI) x 2
- Olivia Newton John Cancer Research Institute
- The Peter Doherty Institute for Infection and Immunity
- Peter MacCallum Cancer Centre x 4
- The Royal Children's Hospital x 3
- The Royal Melbourne Hospital x 8
- St Vincent's Hospital Melbourne x 2
- St Vincent's Private Hospital x 2
- WEHI x 23

Regional

- Ballarat Austin Radiation Oncology Centre
- Barwon Health
- Bendigo Health
- Grampians Health
- Latrobe Regional Hospital
- South West Healthcare (Warrnambool)

Consumer Engagement

Consumers in Partnership: Informing and Inspiring Research.

At The Brain Cancer Centre, we recognise that lived experience is essential to driving meaningful progress in brain cancer research.

Our Consumer Program brings together individuals personally affected by brain cancer, including patients, carers, and families, alongside community members committed to improving outcomes. These consumers are embedded partners, working closely with researchers to share insights, shape decisions, and co-design projects.

In 2025, we further strengthened consumer involvement across the Centre. Consumers partnered with researchers to chair our Annual Scientific Meeting, deliver presentations, and participate in internal grant review panels. They contributed to consultations on research strategic planning and took part in co-design meetings with research teams, fostering genuine two-way collaboration.

By embedding consumers at the heart of our research, we ensure that projects reflect the priorities, perspectives, and lived realities of those affected by brain cancer. This year, our partnerships have continued to evolve, demonstrating that consumers are core contributors to the design, relevance, and impact of our research.

David and Samantha's Story: Shaping Research Through Lived Experience

David and Samantha cared for their daughter, Michelle, who discovered she had a glioblastoma at the age of 27. For almost 11 years, Michelle lived with her cancer. She underwent several rounds of surgery, chemotherapy and radiotherapy, none of which were ever going to cure her and all of which had a massive impact on her ability to do the things she enjoyed and live the life she wanted. "Discovering the tumour and undergoing those invasive treatments had a significant impact, not only on Michelle but on the lives of everyone who loved her. We are still living with the aftermath", said David.

"Preventing other families from going through what we went through inspired us to join The Brain Cancer Centre Consumer Program", explained Samantha. David and Samantha are keen to share their experiences to help researchers find better ways to treat this disease – to minimise the devastation on patients' lives, maximise their quality of life and to discover a cure.

Together, they join small groups of BCC consumers partnering with brain cancer labs to bring lived experience into the labs and to the forefront of the minds of our researchers. Their stories help shape research questions and guide the mission to develop more effective, less invasive treatments. "Sometimes it's a conversation in the tearoom or a throwaway remark and you can almost see the researcher's brain ticking over - it's sparked a thought! There's great satisfaction in feeling you have made even a small contribution to such an important project", said Samantha.

David has provided consumer support to researchers on several grant applications and is currently the Co-Chair of the GLIMMER Consumer Reference Group. This is a MRFF-funded project that seeks to gain a better understanding of the Tumour Microenvironment, with the aim of identifying new targets for immunotherapy treatments and to develop a liquid biopsy to find circulating tumour DNA with standard blood tests. David described how, "…understanding the technicalities can be challenging but the committee has been supportive in implementing a process that ensures consumers are fully involved and respected members of the team".

Samantha is a member of the Research Advisory Committee, which provides critical advice and guidance on the BCC's research activities. Membership includes brain cancer clinicians and researchers from around the world who meet regularly to support strategic planning, insight sharing, quality assurance, risk management, accountability and evaluation, and to ensure the BCC's research aligns with the Centre's mission and vision. Samantha brings a consumer perspective to these important discussions and deliberations.

We extend our sincere thanks to Samantha and David and to all of our consumer partners for the expertise, commitment and time they so generously contribute to The Brain Cancer Centre. Their involvement continues to strengthen our work and drive progress toward our shared vision - a future where no lives are lost to brain cancer.

For queries or to hear more about
The Brain Cancer Centre please contact:

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