

# CHARLIE TEO FOUNDATION

2 March 2022

## BRAIN CANCER RESEARCH SYMPOSIUM

Connecting 'out of the box' thinkers from across the world



**CHARLIE TEO FOUNDATION**  
- funding brain cancer research -

# CHARLIE TEO FOUNDATION

Funding brain cancer research across the globe

WE MUST THINK  
DIFFERENTLY TO  
FIND A SOLUTION

## Our Impact

In the 4 years since our inception, this is what we have achieved



Committed **\$7.5 million** to brain cancer research in Australia and worldwide



Supporting **20 brain cancer research projects** in adult & childhood brain cancer



Most **disruptive and transparent** Australian charity funding brain cancer research



Runs low-cost with **total costs < 20%** of total income. We keep our overheads lean!

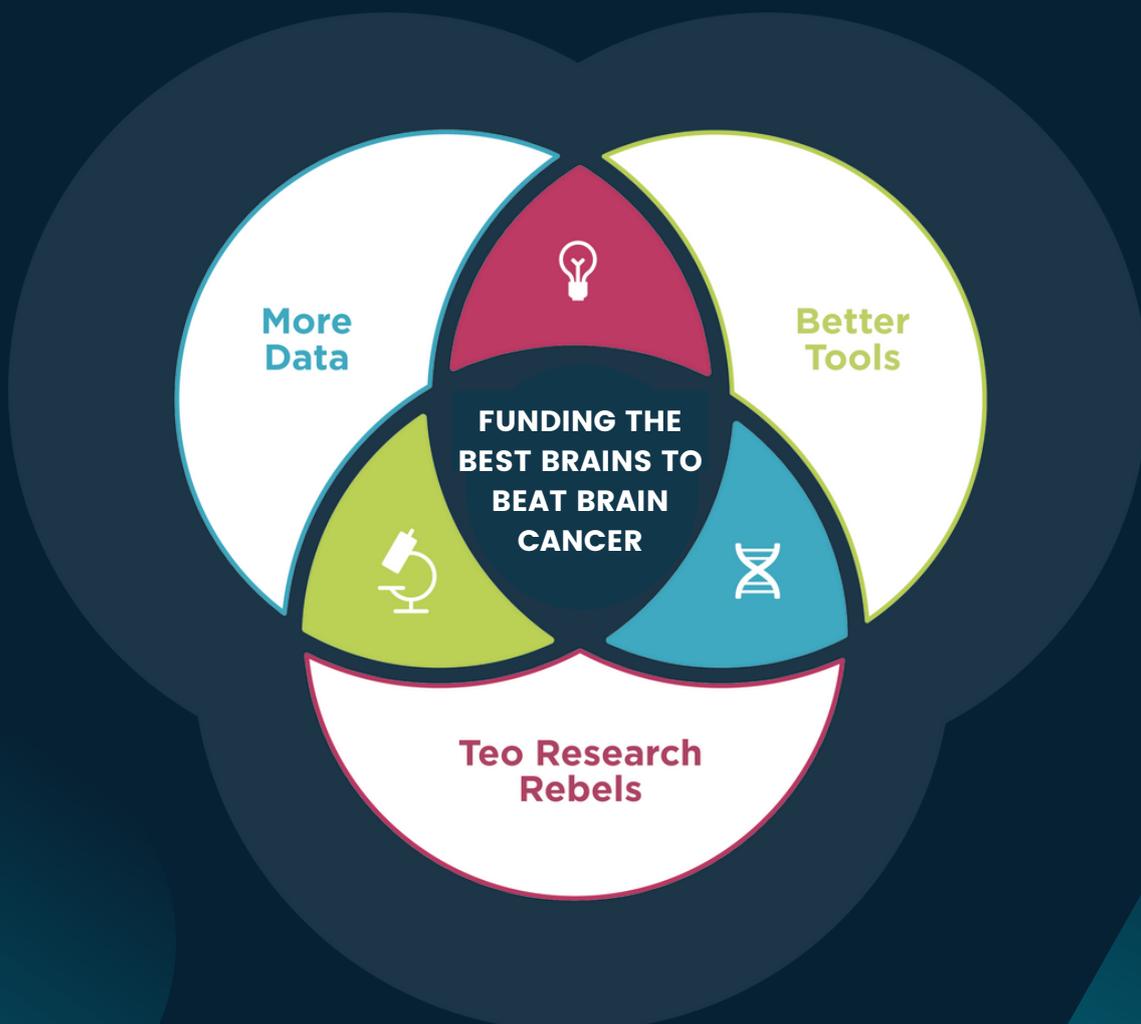


# OUR RESEARCH STRATEGY

**Brain cancer is an incredibly complex problem to solve. Our research strategy creates focus with the flexibility to experiment whilst managing risk.**

We take an agile approach to learn from success and failure and reflect new scientific and clinical developments. We hope this approach will pay dividends in the long run. Dividends to brain cancer patients in the form of hope, better treatments, extending life and the ultimate dream...a cure.

**Key themes guide how and what we fund**



# PROGRAM

Wednesday 2nd March 2022

9am - 12pm\*

\*All times are on Australian Eastern Daylight Time (AEDT)

1.

## OPENING

9AM (30 min)

**Dr Nicole Caixeiro, Head of Research**

Introduction

Acknowledgement of Country

**Alana Phadke, CEO**

Welcome

**Dr Charlie Teo, Founder**

Keynote Address

2.

## BETTER TOOLS SESSION

9:30AM (45 min)

**Facilitator: Prof Paul de Souza, SAC Member**

9:35am **A/Prof Hong Chen**

Focused ultrasound-mediated intranasal delivery for non-invasive drug delivery to the brainstem with minimised systemic exposure in a large animal model

9:40am **Dr Lara Perryman**

Evaluation of Pharmaxis LOX inhibitor in recurrent GBM

9:45am **Prof Steve Kay**

Leveraging novel cryptochrome stabilizers to target GBM

9:50am **Prof Michael Keidar**

Cold plasma discharge tube for GBM treatment

9:55am **Prof Amy Heimberger**

Preclinical validation of a STING agonist to treat GBM

10:00am **Patient & Researcher Open Discussion**

Marcella Zemanek, Wife of Stan Zemanek & Robin Bates, Mother of Bella



# PROGRAM

3.

## TEO RESEARCH REBELS SESSION

10:15AM (45 min)

**Facilitator: Dr Nicole Caixeiro, Head of Research**

10:20am **Dr Charlie Teo**  
Rebel Story

10:35am **Dr Joshua Chou**  
Space microgravity to disrupt GBM mechanotransduction

10:40am **Dr Guillermo Gomez**  
Harnessing artificial intelligence to develop new therapies for GBM

10:45am **Patient & Researcher Open Discussion**  
Kylie Randall, Patient & Kerry-Anne Johnston, Kylie's Supporter

4.

## MORE DATA SESSION

11AM (45 min)

**Facilitator: Dr Raelene Endersby, SAC Member**

11:05am **Prof Joseph Powell**  
Brain Cancer Sequencing: Identifying therapeutic targets from cell state models in gliomas

11:10am **Prof Jeff Holst**  
Developing a metabolic roadmap to discover novel therapeutic avenues to starve GBM

11:15am **A/Prof Peter Fecci**  
Development of Beta-arrestin 2 small molecule inhibitors for brain cancer therapy

11:20am **A/Prof Matt Dun**  
Harnessing the power from within: Neoantigen immunopeptidomics for the development of immunotherapies for the treatment of DIPG

11:25am **Patient & Researcher Open Discussion**  
Jodie Clarkson, Patient & Sue-Ellan Vasiliou, Mother of Alegria

5.

## QUESTION TIME & CLOSE

11:45AM (15 min)



# CHARLIE TEO FOUNDATION TEAM



## **Dr Charlie Teo**

Founder, Director & Scientific Advisory Committee (SAC) Chair  
Neurosurgeon

For over 30 years Dr Charlie Teo AM has been instrumental in the development, dissemination and acceptance of the concept of keyhole minimally invasive techniques in neurosurgery. Dr Teo runs a fellowship program that attracts applicants yearly and has trained many of the world's leading figures in neurosurgery. He has trained at distinguished centres such as the Barrow Neurological Institute, Johns Hopkins University, Duke University, Stanford University, Vanderbilt University and Harvard University.

He has been published in over 120 peer reviewed journals, has authored two books on keyhole approaches to brain tumours and featured as a guest editor for several journals. He is the Australian representative on the Tumour Section of the American Association of Neurological Surgeons (AANS) and CNS.

Dr Teo strongly believes that a surgeon's responsibility to his patients shouldn't end after surgery. In keeping with his desire to find a cure for brain cancer, he has raised over \$35 million that has been used to fund research scientists both in Australia and internationally.

Dr Teo dedicates time every year to pro bono work in developing countries, for which he has been recognised with awards from Rotary International. This includes the Paul Harris Fellowship for contribution to World Health. He has been a finalist in the NSW Australian of the Year awards in 2003 and 2009.

In 2011 his contribution to the development of minimally invasive neurosurgery was recognised in the Australia Day awards where he was named as a Member of the Order of Australia. In 2012, he was invited to give the Australia Day Address to the Nation and in 2013 was honoured to be the first non-politician Australian to address the US Congress on the need for more funding for brain cancer research.

Charlie is a father to four beautiful daughters and supports the rights of girls and young women in impoverished countries such as Cambodia and India through various charities including his own Teo Family Foundation. He is a Patron for Voiceless, an Australian based charity that is dedicated to reducing cruelty to industry animals.



# CHARLIE TEO FOUNDATION TEAM



**Alana Phadke**

Chief Executive Officer



**Dr Nicole Caixeiro**

Head of Research



**Dr Joseph Po**

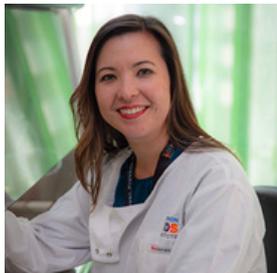
Acting Head of Research



**Prof Paul de Souza**

SAC Member

Medical Oncologist and Foundation Chair of Medical Oncology at Western Sydney University  
Sydney, Australia



**Dr Raelene Endersby**

SAC Member

Co-Head, Brain Tumour Research, Telethon Kids Institute  
Perth, Australia



**A/Prof Peter Fecci**

SAC Member

Assistant Professor of Neurosurgery, Director of the Brain Tumor Immunotherapy Program, and Director of the Center for Brain and Spine Metastasis at Duke University  
North Carolina, U.S.



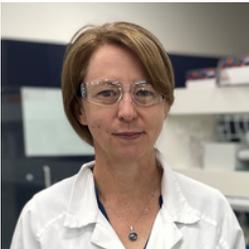
## Better Tools



### **A/Prof Hong Chen**

Washington University  
Missouri, U.S.

Focused ultrasound-mediated intranasal delivery for non-invasive drug delivery to the brainstem with minimised systemic exposure in a large animal model



### **Dr Lara Perryman on behalf of Dr Alan Wang**

Pharmaxis  
Sydney, Australia

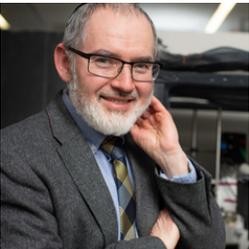
Evaluation of Pharmaxis LOX inhibitor in recurrent GBM



### **Prof Steve Kay**

University of Southern California  
California, U.S.

Leveraging novel cryptochrome stabilizers to target GBM



### **Prof Michael Keidar**

George Washington University  
Washington D.C, U.S

Cold plasma discharge tube for GBM treatment



### **Prof Amy Heimberger**

Northwestern University  
Illinois, U.S.

Preclinical validation of a STING agonist to treat GBM

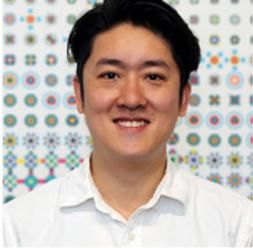


### **Dr Jessica Buck**

Telethon Kids Institute  
Perth, Australia

Using paediatric mice to model paediatric brain tumours

## Teo Research Rebels



### **Dr Joshua Chou**

University of Technology Sydney  
Sydney, Australia

Space microgravity to disrupt GBM mechanotransduction



### **Dr Guillermo Gomez**

University of South Australia  
Adelaide, Australia

Harnessing artificial intelligence to develop new therapies for GBM



### **Dr Kristina Cook**

University of Sydney  
Sydney, Australia

The cancer clock is (not) ticking: how brain tumour hypoxia regulates circadian rhythms



### **Prof Eran Elinav**

Weizmann Institute of Science  
Rehovot, Israel

Developing a HTS platform in identifying microbiome-modulated small molecule impacts on multiple GBM signalling pathways



### **Prof Johanna Joyce**

University of Lausanne  
Lausanne, Switzerland

Illuminating the brain tumour microenvironment: gaining new insights into gliomas through intravital imaging and molecular MRI

## More Data



### **Prof Joseph Powell**

Garvan Institute of Medical Research  
Sydney, Australia

Brain Cancer Sequencing: Identifying therapeutic targets from cell state models in gliomas



### **Prof Jeff Holst**

University of New South Wales  
Sydney, Australia

Developing a metabolic roadmap to discover novel therapeutic avenues to starve GBM



### **A/Prof Peter Fecci**

Duke University  
North Carolina, U.S.

Development of Beta-arrestin 2 small molecule inhibitors for brain cancer therapy



### **A/Prof Matt Dun**

University of Newcastle  
Newcastle, Australia

Harnessing the power from within: Neoantigen immunopeptidomics for the development of immunotherapies for the treatment of DIPG



### **Dr Roel Verhaak**

The Jackson Laboratory  
Connecticut, U.S.

Targeting regions of converging synteny and loss of heterozygosity in paediatric and canine glioma

# PATIENTS & FAMILIES



## Marcella Zemanek, Wife of Stan Zemanek

In May 2006, Marcella's husband Stan Zemanek was diagnosed with a brain tumour. Little did they know that it would turn out to be the deadliest of all brain tumours – Glioblastoma Multiforme Grade IV, or GBM. Stan was initially given 6 weeks to live.

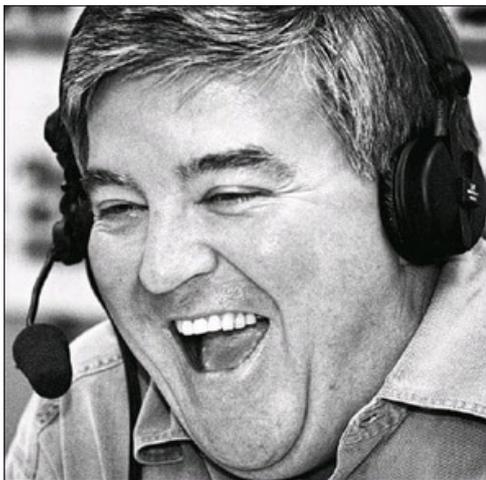
Stan underwent surgery with Charlie, chemotherapy and radiation. He also went on a trial of Avastin, which sadly did not work, and made him feel sick.

Despite all this he continued to work as a broadcaster until the end of 2006.

Marcella and Stan tried to continue on with their lives as normally as they possibly could, even though sadly she could see him slipping away.



Stan lost his fight at home at 2.45am on 12 July 2007 at the age of 60. This was 15 months from his diagnosis. A day that will stay lodged in Marcella's brain forever.



To Marcella, their daughter Gaby, son-in-law Simon and beautiful grandchildren Hamish and Chloe, Stan will always be a true Brain Cancer Warrior.



# PATIENTS & FAMILIES



## Robin Bates, Mother of Bella

Robin lives in Gladstone, Queensland. Her beautiful daughter Bella is 6 years old and has been battling brain cancer (Anaplastic Ependymoma grade III) since she was 13 months old.

Before Bella was diagnosed, over a period of about 6 weeks Bella went from being clingy and not wanting to sleep or eat to the point that her motor functions started to regress.

At the time of diagnosis, Bella's tumour was in the top left side of her brain and had overtaken approximately 25% of her brain. She was extremely lucky to survive her first week following diagnosis.



Bella endured 4 surgeries in that week alone, had a stroke, seizures, fluid drained from her brain, a blood clot in her leg and had multiple blood transfusions. The entire volume of blood in her body was transfused twice over.

Bella has been through 8 brain surgeries and multiple rounds of chemotherapy. At age 2 she received a terminal diagnosis after the recurrence of her tumour.



People that meet Bella don't realise what she has been through because she is a beautiful and spirited 6-year-old girl. However, the long-term effects from both her cancer and her treatment are undeniable. She is old enough now to realise that she is different, but has an incredible tenacity to keep up.

Due to the aggressive nature of her tumour, Bella's future is still uncertain.



# PATIENTS & FAMILIES



## Kylie Randall, Patient

Kylie is a single mum of two boys Zak & Harry. She was diagnosed with an Oligodendroglioma in late February 2020, just before COVID hit.

On 9 March 2020, Charlie operated on Kylie and removed 80 percent of her tumour. Due to the location of the tumour, Kylie had to regain her walking and a lot of strength was gone from the left side of her body.

Kylie learnt to walk again and gradually built her strength up. There were a few ups and downs along the way like a blood clot in the lung and an epileptic seizure. The tumour does cause seizures and so Kylie is now epileptic as well.



Since the operation Kylie has had 7 weeks of radiation on the remaining 20 percent of the tumour and 6 months of chemotherapy.

Kylie's most recent scan in February 2022 showed the tumour has not grown, which is great news. She will have her next MRI in 4 months' time.



# PATIENTS & FAMILIES

## Jodie Clarkson, Patient



Jodie lives in Alice Springs and has a beautiful 13-year-old son, Jacob.

In 2017 Jodie started getting feelings of déjà vu followed by nausea, losing consciousness briefly and falling over. This happened about 20 times.

At age 45, Jodie was diagnosed with a 5cm x 7cm grade II Diffuse Astrocytoma (IDH1 mutation) that had taken over her right temporal lobe. She had a 10 hour radical lobectomy in Adelaide, was in ICU for a week, back in the ward for a week, then discharged.

Jodie suffered limited vision on her left side and some balance problems. She is super fit and was back running and bike riding within a few weeks, and doing her best to have a vegetable based diet.

8 months later, the tumour was back at a grade III and Jodie was given 6 months to live. Jodie flew to Sydney to see Charlie, who resected her tumour the next day in a 5-hour operation. Jodie was in ICU for a couple of hours, back in the ward and discharged the next day. This was nearly 5 years ago.

Jodie completed 6 months of chemo (temozolomide) in mid-2021. It was the most physically & psychologically challenging 6 months of Jodie's life so far. Chemo has shrunk what she refers to as the 'monsters face' inside her head.



Jodie's cancer continues to advance.

As a strong-willed, proud Territorian, Jodie has continued to work with the Alice Springs Hospital and medical specialists to start to plan her end of life. Jodie made a request to donate her brain for research, however the NT law did not allow this. Jodie advocated and lobbied and made her voice known that she wished her brain to be donated for research. It is because of Jodie that the Northern Territory law has recently been changed – it is Jodie's law.



Jodie has also donated her tumour tissue to the Charlie Teo Foundation Brain Tumour Bank.



# PATIENTS & FAMILIES

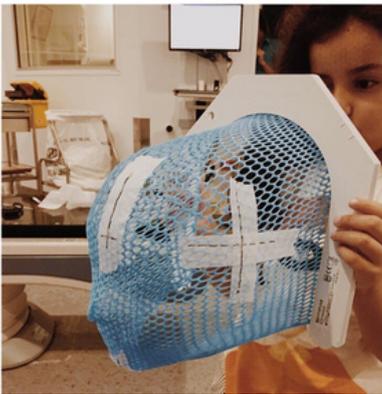


## Sue-Ellan Vasiliou, Mother of Alegra

Sue-Ellan is Alegra's mother. Alegra was diagnosed with DIPG at the tender age of 5, at Christmas time in 2016. Alegra lost her battle with brain cancer 10 months from her diagnosis.

The only symptom Alegra had of the disease was her slight facial paralysis. As she smiled only the right-hand side of her mouth curled up. She endured a 5-hour surgery by Charlie in December 2016. When she awoke, she demanded the tubes be removed and that she eat a sausage sandwich.

2 weeks post-surgery, Alegra was fitted for her mask for her targeted radiotherapy treatment. This was the only conventional treatment offered and available to her. She had 30 radiotherapy treatments, countless MRIs, blood tests and doctors' appointments.



6 weeks post-surgery and only 2 weeks into her radiotherapy treatment, Alegra's MRI showed a significant reduction in the size of her tumour. All was going well post-surgery and treatment. Alegra started school.

She went to school every day, swam, danced and attended gymnastics classes.



But things changed for Alegra so quickly. Alegra took her last breath in the morning of 7 October 2017. Age 6, only 10 months from diagnosis.

Sue-Ellan and her husband, Marino, founded the Little Legs Foundation (LLF) in memory of their angel. LLF raises awareness and funding for childhood brain cancer in partnership with the Charlie Teo Foundation through the Alegra's Army Grant. To date, LLF has committed over 1 million dollars to childhood brain cancer research.





# CHARLIE TEO FOUNDATION

• funding brain cancer research •

☎ +61 2 8880 8328

🏠 Level 1, 605 Botany Road, Rosebery NSW 2018, Australia

✉ [research@charlieteofoundation.org.au](mailto:research@charlieteofoundation.org.au)

Charlie Teo Foundation ABN 57 622 041 061 is a registered charity with the Australian Charities and Not-for-profits Commission (ACNC) and is endorsed as a Deductible Gift Recipient Item 1 (DGR1)