

2017 AGM PRESENTATION SUMMARY



NRF

NeuroSurgical Research Foundation

At this year's AGM four researchers gave presentations on their recent work into traumatic brain injury, concussion and biochemistry of brain tumours. You can read about these below, all the presentations summarised the high-quality, innovative and clinically-relevant research being conducted by our dedicated research team, comprised of both basic scientists and clinical researchers.

The extended team continues to conduct world-class research, working towards a common goal of finding new interventions and treatment strategies for life-threatening neurosurgical conditions such as spinal cord injury, traumatic brain injury, stroke, brain tumours, concussion, paediatric and neurodegenerative disorders including Parkinson's.

Stephanie Plummer PhD Candidate

Brain Injury Research Group, Translational Neuropathology Laboratory, The University of Adelaide

Using a naturally occurring molecule to help treat Traumatic Brain Injury.

Traumatic brain injury (TBI) is a life-threatening injury for which there are currently no effective pharmacological treatments. My research is exploring developing the amyloid precursor protein (APP) – a naturally occurring molecule in the brain – as a novel treatment option after trauma. A very small portion of APP – 15 amino acids long – called APP96-110 has shown to be beneficial following TBI. We have shown that a very small dose of APP96-110 can be delivered intravenously (directly into the blood stream) and it will remain effective for up to 5 hours following trauma. It is able to protect the brain from ongoing damage by reducing the severity of injury and inflammation to the cells, and by improving physical outcome – helping the brain to heal itself.



Jessica Sharkey PhD Candidate

Brain Injury Research Group, Translational Neuropathology Laboratory, The University of Adelaide

Developing models of Concussion: Exploration of different outcomes in adolescent vs. adult populations.



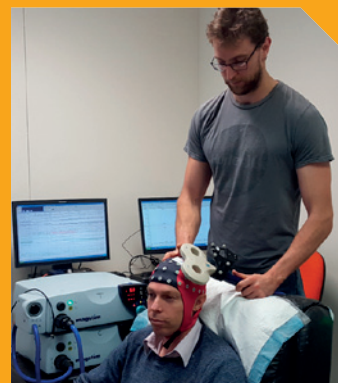
Concussion is a significantly growing public health issue, with the highest at risk population being those individuals aged 10-19 years old. Despite evidence suggesting that adolescents can take up to twice as long to recover from the effects of concussion as adults, limited research has been conducted into what drives this difference in vulnerability and recovery. Coupled with premature return to play during this vulnerable recovery period, adolescents place themselves at risk of suffering subsequent concussions, which may further worsen long-term outcomes. In order to understand why adolescents may be more vulnerable to the effects of concussion, we are aiming to develop pre-clinical models that allow investigation of several secondary injury mechanisms such as the neuroinflammatory response and degree of axonal injury, which can then be used to develop targeted treatment strategies.

Dr George Opie ARC Research Associate

Discipline of Physiology, The University of Adelaide

Understanding how Concussion affects the brain.

While concussions have often been considered to have few long term consequences, growing evidence suggests that changes in how the brain functions may actually be apparent for months to years after injury. Using non-invasive brain stimulation techniques, our study is beginning to characterise the mechanisms that contribute to these pervasive effects. Although additional data is required, early results from this study suggest that the activity of specific circuits within the brain may be modified following concussion. These deficits may have clinical relevance for more objectively tracking a patient's recovery from injury.



NRF TEAM NEURO 2017

RAISES \$25,020 FOR LIFE-SAVING
NEUROSURGICAL RESEARCH

**DR JONES
& PARTNERS**
MEDICAL IMAGING



Thank you to all of our wonderful participants, sponsors, volunteers, and friends in the City-to-Bay! NRF Team Neuro looked fantastic and everyone did an outstanding job raising funds and awareness for NRF research into brain tumours, stroke, neurodegenerative disease, neurotrauma, paediatric and much more. Everyone had their own personal reason and story for taking part ranging from brain tumour survivors, researchers and those competing in memory of someone lost. All raising much needed funds for improved treatments, extended life expectancy and ultimately cures for neurosurgical conditions.

Thank you Lucinda Gregory – Image Design
Thank you to all the participants and a HUGE thank you to all the donors!



Team Patrick for the 5th year



Ally & Caitlin for the 5th year



Marg & Amy Dr Jones & Partners
5th year



Lucinda & Emma Brain Tumour
Warrior with Cherrie & Martin Adams
SETL



Running for Richard
Kerry, Adam, James



Bec & Naomi

OTHER NRF TEAM NEURO MEMBERS:

Dr Jones & Partners: Margaret, Thy, Lawry, Anna-Marie, Amy

Jeans: Lauren & Fergus

Phillips (Wombat): Sue, Kay, David, Andrea, Tony, Jayne

Simon & Crew: Simon, Aileen, Sam, Sarah, Danielle, Laura, Renee

Uni Adelaide: Stephanie, David, Martin

Uni SA: Stuart, Briony, Lauchlan, Olivia, Jason, Alice, William, Melinda

NRF Team Neuro comprising of over 687 team members has already raised \$235,000 for life saving and life change neurosurgical research since 2011.

Thank you to NRF Team Neuro:
Generously Sponsored by
Dr Jones & Partners since 2012.

VOLUNTEERS: Anna, Bob, Heather, James, Nicholas, Oana, Rosemary, & Ryan.

NRF LAUNCHES \$1M ATTACK ON LETHAL BRAIN TUMOURS

Prof Stuart Pitson
NHMRC Senior
Research Fellow



These funds will help UniSA's leading brain tumour researcher, Professor Stuart Pitson, further his research into glioblastoma, a highly malignant and the most commonly diagnosed brain tumour in adults and medulloblastoma in children.

The research team at UniSA will use the \$1 million research pledge to establish the NRF Chair of Brain Tumour Research which will work towards developing new drugs in the fight against lethal brain tumours. Glioblastoma is one of the most aggressive forms of brain cancer and is especially resistant to treatment. This cancer affects people of all ages and has an extremely low survival rate – with a median survival time from diagnosis of approximately 15 months – it is a devastating disease.

Prof Pitson and his team in the Centre for Cancer Biology have identified the defect in the glioblastoma cells that appears to cause the cancerous tumour to grow rapidly and become resistant to chemotherapy.

"This single defect, involving hyper-activation of the SK2 protein, is an ideal target for new therapies for glioblastoma. We have developed inhibitor drugs to the SK2 protein which are showing great promise in the laboratory and pre-clinical models. The continued and generous support from NRF will allow my team to enhance our promising research and bring us closer to clinical application. It is essential that we are doing all that we can, and as quickly as we possibly can, to find more effective treatments for glioblastoma so we can increase patient prognosis from months to years," Prof Stuart Pitson.

BRAIN TUMOUR FACTS:

- About 1,600 Australians are diagnosed with a brain tumour year
- About 650 of those are children
- About 1,000 Australians (about 80 in SA) are diagnosed with glioblastoma each year
- 4 people everyday are diagnosed
- Kill more people under the age of 40 than any other cancer
- Kill more children in Australia than ANY other disease
- Current median survival is only about 15 months
- Mortality rates have barely changed in 50 years
- Treatment is challenging because it affects our most vital organ

BRAIN TUMOURS IN AUSTRALIA

Brain cancer costs more per person than any other cancer, yet only receives a small fraction of federal government cancer research funding. Our goal is to further develop our SK2 inhibitor drugs so that they can be used with chemotherapy, maximising its attack on the tumour. We are advancing this work into pre-clinical models and the results have been extremely promising and at this stage of the project we are extremely grateful for this important support from the NRF.

BRAIN CANCER
KILLS MORE CHILDREN THAN ANY OTHER DISEASE

Yet 90% of Australians are unaware of this fact

*SOURCE CURE BRAIN CANCER RESEARCH OF 1,010 NATIONALLY REPRESENTATIVE AUSTRALIAN ADULTS AGED 18+ JULY 2014

NUMBER OF DEATHS BETWEEN 2011-2015



Research Team at Centre for Cancer Biology of the University of South Australia and SA Pathology.

CHARITY FILM EVENING

TWO MOVIES FOR THE PRICE OF ONE DOUBLE FEATURE - LATEST RELEASE

When: Sunday 12th November 2017 at 6.00 pm (One Night Only)

Where: Wallis Piccadilly Cinema, 181 O'Connell Street North Adelaide 5006

Price: Cost: \$19.00 (no concessions)
Cash only on the night.

To book:

Contact NRF direct phone: 8371 0771

Email: info@nrf.com.au

Online: www.nrf.com.au

MURDER ON THE ORIENT EXPRESS

Crime / Drama / Mystery

Starring Johnny Depp, Michelle Pfeiffer, Daisy Ridley, Judi Dench, Penelope Cruz, Kenneth Branagh and Willem Dafoe.

A lavish train ride unfolds into a stylish & suspenseful mystery. From the novel by Agatha Christie, Murder on the Orient Express tells of thirteen stranded strangers & one man's race to solve the puzzle before the murderer strikes again.

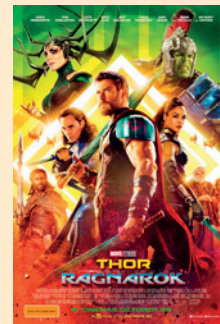


THOR: RAGNAROK

Action / Drama / War

Starring Chris Hemsworth, Tom Hiddleston, Cate Blanchett, Benedict Cumberbatch and Anthony Hopkins.

Imprisoned, the mighty Thor finds himself in a lethal gladiatorial contest against the Hulk, his former ally. Thor must fight for survival and race against time to prevent the all-powerful Hela from destroying his home and the Asgardian civilization.



Lightsview

RIDE LIKE CRAZY

Proudly supported by the South Australia Police

SUNDAY 14TH JANUARY 2018

ADULTS \$115 / CHILDREN \$55

10TH & FINAL RIDE

COURSE INFO

LONG COURSE: 107KM

SHORTCUT: 91KM

SHORT COURSE: 51KM

- + KING/QUEEN OF THE MOUNTAIN CHALLENGE (OPTIONAL)
- + CORKSCREW CHALLENGE (OPTIONAL)

ALL RIDERS WILL RECEIVE A RIDE LIKE CRAZY JERSEY OR POLO, FREE LUNCH & REFRESHMENTS

WHY WE RIDE

10 YEARS ON AND A LOT HAS BEEN ACCOMPLISHED IN THE MEMORY OF MICK "CRAZY" KOERNER

OVER \$1.5 MILLION RAISED TO FIGHT CANCER / REGISTER OR DONATE AT RIDELIKECRAZY.COM

All Profits Support:

DIARY DATE NOTICE

Saturday 28th April 2018

NRF Brain Tumour Research Chair \$1million Presentation Gala Dinner at University of South Australia

Details to follow