



SAHMRI
Discovery
Circle

Your 2025 Finalists

Welcome

Now in its second year, the Discovery Circle has grown in impact and plays a keyrole in advancing SAHMRI's early and mid-career researchers and their life-changing work.

Your collective support isn't only a financial lifeline – it provides the vital stability and time these researchers need in a landscape where grant funding is limited and highly competitive. For early- and mid-career researchers, these funds can mean the difference between pursuing bold, novel ideas or having to step away from a potential discovery altogether. Beyond funding, your support also builds their visibility and profile, helping them secure future grants and establish their careers.

We've already seen this impact through the success of our 2024 recipient, Dr Elyse Page, whose project has flourished and opened new avenues of research. Your generosity is both a practical resource and a profound vote of confidence in SAHMRI's people, our science, and our shared vision of a healthier future for all.

We're so grateful for your support and look forward to introducing you to our three 2025 finalists.

Thank you, on behalf of everyone at SAHMRI.

Professor Maria Makrides
SAHMRI Executive Director



Discovery

2025 Members

AirTouch	Beverley James
Aaron Blabey	Dr Stewart Lake
Kirsty Blabey	Roger Lang
Paul and Paula Bonney	Jennifer Richter AM
Richard Bray	Shaun Rolevink
Julian Burton OAM and Kay Burton	Helen Rule
Carthew Foundation	Don Sarah AM
Wee Keat Chan	Ian and Kathryn Sargent
Dr Margaret Davy AM	Dr Lea Thin Seow
Foskett Foundation	John Watts
Karen Hayes AM DSJ and Graeme Hayes	Paul Wheelton AM CGSJ
Kathryn House AM DSJ	Dr Evelyn Yap OAM
Nick House	Eric and Ivy Yeoh
Insurance Advisernet Foundation	

Correct as at 10 October 2025

Circle



Dr Julian Carosi

Postdoctoral Researcher/THRF EMCR Fellow
Lysosomal Health in Ageing, Lifelong Health Theme

Project

Destruction of toxic proteins that cause neurodegeneration

Biography

Julian completed his PhD at SAHMRI and the Centre for Cancer Biology in 2021 investigating the cell's waste-disposal system — a process called autophagy — and its role in neurodegenerative diseases. He was then appointed to lead SAHMRI's Autophagy Biomarker Discovery program, dedicated to advancing autophagy research toward the clinic and enabling its translation into human health outcomes.

Julian is an emerging leader with 18 publications in field-leading journals and research that has generated three patent applications. His contributions to the scientific community include co-authoring autophagy research guidelines, organising and chairing a leading international autophagy conference, and acting as guest editor and peer reviewer for scientific journals. For his research program, he has secured over \$2.5M in grant and fellowship funding and formed multidisciplinary collaborations. Julian has co-supervised three PhD students, two Honours students (both First Class), a research assistant, and five undergraduates. Soon he intends to establish his own research lab.

Research Summary & Impact

Sticky clumps of a protein called Tau build-up in many neurodegenerative diseases, causing brain cells to die. The shape and toxicity of these clumps can differ between diseases and contribute to disease progression. Julian's research explores how autophagy detects and removes these clumps. It also tests whether drugs can help target Tau clumps, opening up new prevention or treatment strategies.

The Tau protein misfolds, becomes 'sticky', and forms toxic clumps in the brain, driving neurodegeneration in many diseases that cause dementia.

Yet, there are no truly effective disease-modifying treatments to meaningfully prevent or slow these conditions. Without breakthroughs, the number of Australians living with dementia will double within 30 years.

Drug development takes decades, so it is critical that we act now to develop new approaches. Julian's research project takes a disease-modifying approach: harnessing the cell's own waste disposal system (autophagy) to eliminate toxic Tau aggregates from the brain.

By uncovering how autophagy detects and clears different types of Tau aggregates found in specific diseases, Julian will pinpoint which diseases are most likely to benefit from emerging autophagy-based therapies, and develop strategies to selectively destroy Tau aggregates. The impact of this research could be far-reaching: it may directly inform clinical indication and disease cohort selection for human drug trials, improving their chances of success, generate valuable IP, and catalyse opportunities for industry collaboration to accelerate drug discovery. On a personal level, it will cement Julian's position as an emerging leader in autophagy research and assist greatly in establishing his independent research group.

Funding

The Discovery Circle funding will allow Julian to create advanced cell models that rapidly reproduce the toxic protein build-up seen in dementia — changes that would otherwise take decades to form in the human brain. This will let him explore new therapeutic opportunities to remove and destroy these harmful proteins by hijacking the cell's own waste-disposal system.



Dr Georgina Irish

Senior Research Fellow

Australian New Zealand Dialysis and Transplant Registry

Project

Matching Matters: Increasing Donor Utilisation and Improving Allocation for Kidney Transplant Recipients

Biography

Georgina submitted her PhD in 2025 and is launching an independent research career, while working clinically as a transplant nephrologist at the Royal Adelaide Hospital. She has already produced 33 peer-reviewed publications (12 as first-author), received competitive national scholarships, and regularly presents at international and national scientific meetings. She supervises clinician-researchers and medical students and is actively involved in mentoring and capacity-building.

Georgina chairs the Transplant Society of Australia and New Zealand Early Career Research Committee and the Transplant Society Early Career Committee, serves as Director of Projects and Analytics for the Australian and New Zealand Dialysis and Transplant (ANZDATA) Registry, and is the Medical Director of Transplant Australia. Her research focus is on transplant epidemiology, registry science, risk prediction, and global transplant ethics. She leads programs using registry data to inform decision-making in transplantation and co-founded two research groups: the Transplant Epidemiology Group (TrEG) and the International Travel for Organ Transplantation (ITOT) Collaborative.

Research Summary & Impact

Kidney transplantation offers survival and quality-of-life advantages over dialysis, yet many donor kidneys are not utilised. This inefficiency contributes to longer wait times, increasing co-morbidities, increased cost and missed opportunities for patients who may die whilst awaiting a transplant.

Georgina's project directly addresses this urgent and growing need by targeting both ends of the allocation pathway: increasing safe utilisation of available

donor kidneys and improving the matching of recipients to organs. This is the first Australian program to combine registry science, health system simulation modelling and co-design to develop practical, evidence-based tools that will inform policy and decision-making. These include improved matching algorithms, decision support tools, and equity-focused performance monitoring.

The timing is critical: Australia's transplant waitlist is growing, organ donation is recovering after the impact of COVID-19, with policy reform being actively sought. This project is co-led by national registry partners and health leaders to ensure real-world implementation. The outputs are designed to deliver immediate impact by improving access, reducing discard, and enabling better patient outcomes. In doing so, this work will transform a historically opaque, clinician-led process into a more equitable, data-driven system – addressing not just inefficiency, but fairness and transparency in organ allocation.

Funding

The Discovery Circle Award will support the allocation of dedicated research time for Georgina to lead this research, involve patients and families so their perspectives guide every step, and allow her to share findings widely through international conferences and publications. The Discovery Circle support could increase the number of transplants, increase access to transplantation, support informed decision-making, and ultimately improve survival and quality of life for those waiting for transplants.



Dr Naranie Shanmuganathan

Clinical Research Fellow
Precision Cancer Medicine Theme

Project

Unravelling the mechanisms involved in blast phase chronic myeloid leukaemia (CML)

Biography

Naranie is a clinical and transplant haematologist working at the Royal Adelaide Hospital while also being an early career clinician, having completed her PhD in 2023 with 45 publications including 22 as first author. This included 5 publications in Blood, the primary haematology journal. Naranie's PhD work in biomarker discovery, genomic investigation and outcome prediction in chronic myeloid leukaemia has led to her being recognized as an emerging national and international expert in myeloid neoplasm genomics. She has been awarded \$160,000 and €80,000 in competitive grant funding and is an Associate Investigator on a successful MRFF grant.

As an emerging world leader in chronic myeloid leukaemia (CML), a blood cancer affecting thousands of patients worldwide, Naranie has presented her research at multiple national and international conferences such as the American Society of Hematology and the European School of Haematology. She has also been invited to chair and present the CML education sessions at these meetings as well as writing high impact papers in her research field.

Research Summary & Impact

The introduction of targeted therapies in CML has been successful for the majority of patients, although progression and resistance still occur. Understanding the mechanism of how and why some patients progress to the inevitably fatal phase of CML will be the focus of Naranie's project, aimed at improving our understanding of genetic changes in patients with CML.

Most CML patients respond well to a treatment known as tyrosine kinase

inhibitors (TKIs). However, some patients (15–20%) either progress to the highly aggressive 'blast phase' or fail to respond to TKI therapy. Blast phase CML is fatal without an allogeneic stem cell transplant, despite TKI and chemotherapy. Therefore the primary goal of treatment remains prevention of this terminal phase, although the mechanisms of progression and resistance are poorly understood.

Naranie's team have discovered novel rearrangements associated with the formation of the Ph-chromosome. These rearrangements, occurring on the Ph chromosome, correlate with poorer outcomes for the patients. More recently, her group have now identified a distinct class of acquired complex structural rearrangement called chromoplexy, associated with TKI resistance and which are not detectable by conventional genetic testing. Ph chromoplexy could constitute a new mechanism contributing to TKI resistance. This project will enable further investigation of this complex chromosomal rearrangement and identify whether it can be used as a biomarker for disease progression, a "warning" sign that is greatly lacking, enabling pre-emptive intervention.

Funding

The funding generated from the Discovery Circle Award will support a 12-month research project focused on studying abnormalities in the Philadelphia chromosome, a key genetic marker in CML, using advanced long-read DNA sequencing technology which has never been performed before.

The funding will be used to support dedicated research time for Naranie to allow her to conduct this critical research in the understanding and treatment of CML, ensuring that findings are directly translated within the clinical setting.



2024 Winner Update

Dr Elyse Page

Since winning the 2024 Discovery Circle Award, Elyse and her team have focused on: expanding the patient cohort of Acute Lymphoblastic Leukaemia (ALL) patients with central nervous system (CNS+) disease, running samples through their pipelines for the multi-omic analysis, and using new recruit Luke Quinlan's laboratory model to explore the roles of the candidate biomarkers in chemotherapy resistance.

Luke had the first presentation of his work in August and won the best poster award at the 2025 Florey Conference Postgraduate Research Conference, and will present at a national conference in October.

Expanding the Patient Cohort

In 2025, Elyse collected samples from 11 new childhood ALL patients, expanding her dataset to 50 patients and bringing the total cohort to 12 subtypes. This diversity is crucial, as it allows the team to study biomarkers in CNS+ ALL both broadly and at a subtype-specific level, helping them uncover key factors that may contribute to treatment resistance.

Genomic Sequencing & Metabolomic Analysis

18 samples have passed through the genomic sequencing pipeline and data analysis is underway. Elyse has also used proteomic sequencing to analyse 8000 proteins to identify which ones play a critical role in CNS+ ALL, and matching these to their genomic expression, which will allow the use of multiple layers of

biological data for validation of candidate biomarkers. The next step for these samples is metabolomic analysis, which could reveal new therapeutic targets aimed at disrupting leukaemia cell survival.

Understanding CNS Relapse & Chemotherapy Resistance

The team have developed a laboratory model that mimics the brain environment, and have used this model to observe that leukaemia cells slow their growth when exposed to brain-like conditions instead of the bloodstream. This adaptation may be a key factor in chemotherapy resistance, allowing leukaemia cells to survive and relapse in the CNS. They are investigating why some patients relapse and how to target ALL cells more effectively using a personalised medicine approach.

2024 Finalist Updates



Dr Rachel Elovarris

Since being named a finalist for the 2024 Discovery Circle Award, Dr Elovarris has secured additional funding through the Hospital Research Foundation's Health Translation SA Medical Research Future Fund Catalyst Grant Scheme. This funding will support her study investigating whether continuous glucose monitoring, combined with the provision of healthy meals, can help Aboriginal women with gestational diabetes better manage their condition and improve birth outcomes.

Conducted in partnership with Ngangkita Ngartu (Aboriginal Family Birthing Program), Pika Wiya Health Service, and Port Lincoln Aboriginal Health Service, the study will take place over the next year. If successful, its findings could inform a larger-scale study with national collaborations, ultimately aiming to reduce adverse health effects for both mothers and babies.



Dr Ryan O'Hare Doig

Over the last 12 months, Dr Ryan O'Hare Doig and his team developed and pilot tested a novel protocol, to create high resolution maps of biological markers with injured spinal cord tissue. Funding from the Discovery Circle and other sources enabled him to purchase specialised consumables and dedicated machine use for the developed protocol. This generated pilot data, which was then used to apply for a number of grants, including Tour De Cure and the NHMRC.

The protocol developed and tested in spinal cord tissue was the first of its kind for SAHMRI and remains a relatively understudied area world-wide. With these activities, Ryan was successful in receiving a further \$50,000 in donations to support the on-going work, as well as \$10,000 in funding from Tour De Cure to fund a PhD scholarship for Reeya Patel's work in Paediatric Spinal Cord Tumour Diagnostics.

SAHMRI Discovery Circle



Thank you

We thank all the 2025 Discovery Circle members who made this Award possible, providing a significant boost to early and mid-career research at SAHMRI.

We also thank all 20 applicants for the 2025 Discovery Circle Award and look forward to sharing more details about our other rising stars of research with you soon.

As a non-profit organisation, SAHMRI relies on the support of our community to continue making medical and scientific breakthroughs. Whether through the Discovery Circle, supporting our campaigns, corporate partnerships, monthly giving or leaving a bequest to SAHMRI in your Will – it all makes a significant difference to the work we can achieve.



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