

2021 TECNIPLAST AUSTRALIA

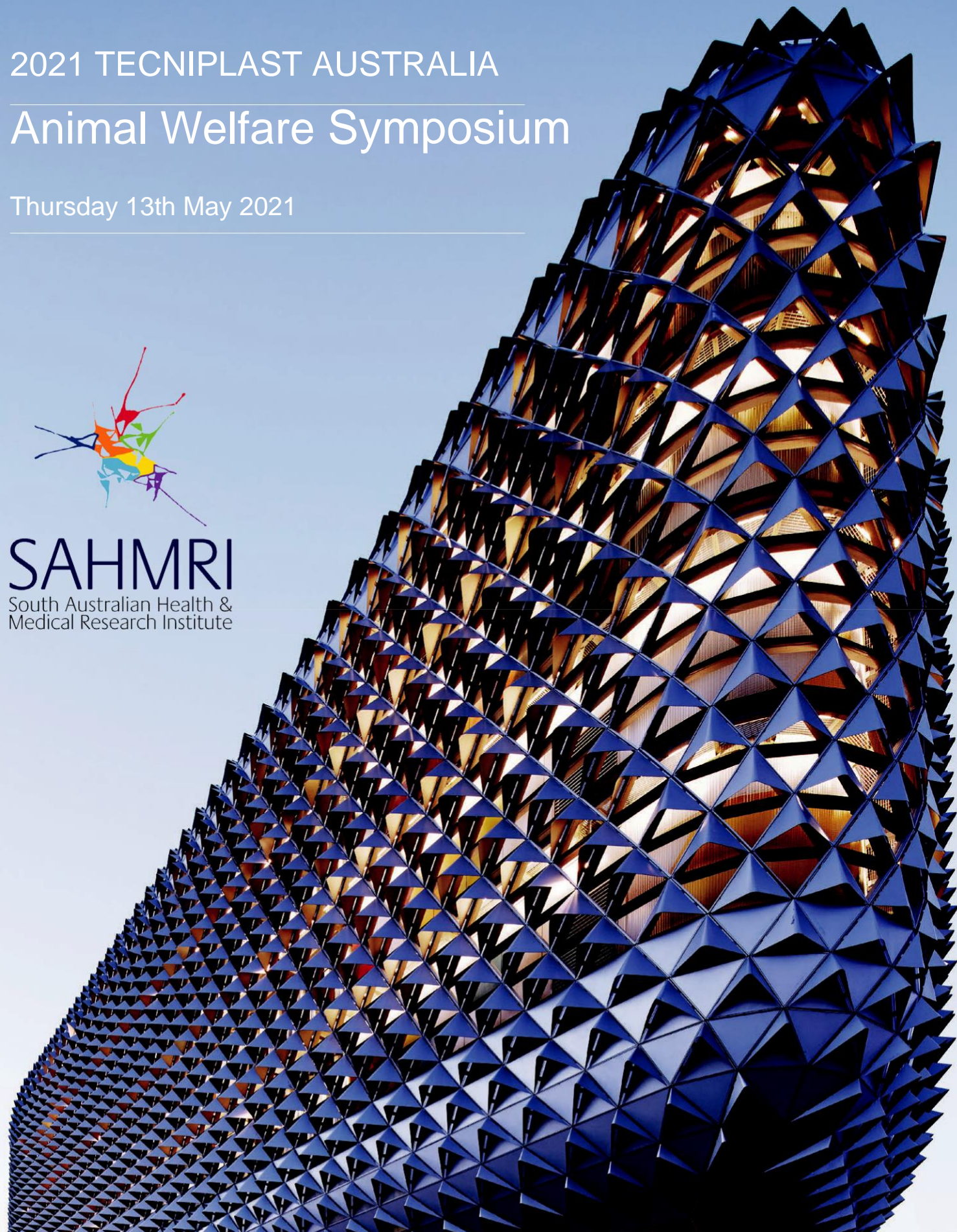
# Animal Welfare Symposium

Thursday 13th May 2021



## SAHMRI

South Australian Health &  
Medical Research Institute



# SYMPOSIUM

THURSDAY 13TH MAY 2021 - Animal Welfare Symposium

## 8.30am – 9.00am Registration

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9.00am – 9.10am	Welcome	Dr Chris Brown
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9.10am – 9.25am	Introduction to SAHMRI	Prof. Paul Thomas
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9.30am – 10.00am	Innovative techniques to demonstrate changes that occur following CNS injury	Dr Ryan O'Hare Doig
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10.00am – 10.30am	Use of DVC in neurodegenerative models	A/Prof. Amanda Kiliaan
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## 10.30am – 10.45am Morning Tea

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10.45am – 11.15am	Training & Development	Dr Lewis Vaughan
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11.15am – 11.45pm	Microbiological Health Colony Monitoring	Amy Gathercole
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11.45pm – 12.15pm	Evaluation of Novel Alternatives to the Forced Swim Test	Carlee Mottley
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12.15pm – 1.00pm	Tech Talks	
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## 1.00pm – 1.30pm Lunch & Sponsor Presentation

## 1.30pm – 2.00pm ANZLAA & ANZCCART Presentations

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2.00pm – 2.30pm	Pig Psychology	Dr Emma Greenwood
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2.30pm – 3.15pm	Panel Discussion *Openness In Research *Animal Welfare In Teaching *Humane Endpoints *Mental Health in Research	Dr Malcom France Dr Alex Whittaker Mike Hill Paula Porter
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3.15pm – 3.20pm	SAHMRI Close	Dr Chris Brown
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# SYMPOSIUM

## THURSDAY 13TH MAY 2021 – Gnotobiotic Workshop

3.30pm – 3.45pm	Welcome	Samay Trec
3.45pm – 4.15pm	Current technologies and welfare considerations	Joana Bom
4.15pm – 4.35pm	Gnotobiotic research Project- Can probiotics modulate immune responses?	Dr Miriam Lynn
4.35pm – 5.00pm	Considerations and complexities regarding lab animals and the microbiome	Emily Duggan
5.00pm – 5.10pm	Gnotobiotic's at SAHMRI	Samay Trec
5.10pm – 5.40pm	Panel Discussion *Progression of Gnotobiotics in Australia compared to the US & other countries *Alternatives ways to perform Gnotobiotic experiments? *Considerations bacterial depletion using antibiotics vs germfree mouse models	Joana Bom Emily Duggan Dr Miriam Lynn
5.40pm – 5.45pm	Close	Samay Trec

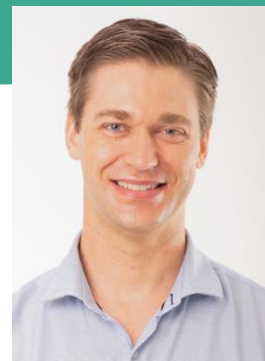
### Gnotobiotic Workshop Summary

The vast improvement and global accessibility of high-throughput DNA sequencing technologies that occurred sometime between 2000-2006 has given scientists the ability to identify and study the trillions of microorganisms that inhabit the human body. Research into the gut microbiome has boomed as scientists continue to show links between gut bacteria, host health, development and disease. As such, gnotobiotic facilities are fast becoming popular around the world.

This component of the Animal Welfare Symposium will explore how gnotobiotic facilities have evolved in Australia. Joana Bom, our international guest speaker will share knowledge of newer technologies being employed at her well-established facility in Lisbon, Portugal and we will see how this compares to facilities like Translational Research Institute (University of Queensland) which has been operational since 2016 and SAHMRI which is entering initial stages of expansion.

## Dr Christopher Brown

Dr. Chris Brown is a veterinarian and Animal Welfare Officer at the South Australian Health and Medical Research Institute and the University of South Australia. His interest in animal welfare first started in general clinical practice working with a variety of animals and observing how he could help in improvements in the field. When an opportunity opened in 2018 to join SAHMRI Chris was excited to join and contribute to the developments and refinements in animal welfare within the institution. Chris has served on both the SAHMRI and University of South Australia's Animal Ethics Committees since 2018.



## Professor Paul Thomas

Prof Paul Thomas leads the Genome Editing Program and SA Genome Editing (SAGE) Facility at the University of Adelaide and South Australian Health and Medical Research Institute. His research focuses on the development of CRISPR/CAS9 genome editing technology for a range of applications including generation and analysis of mouse models for epilepsy and development of genetic therapies for inherited muscle and eye diseases.

Prof Paul Thomas has published more than 100 scientific articles (>9,000 citations) and is supported by competitive funding from the National Health and Medical Research Council and the Australian Research Council.



## Dr Ryan O'Hare Doig

Dr. Ryan O'Hare Doig's early research career has focused on understanding the pathophysiology of secondary degeneration following neurotrauma to the central nervous system (CNS). He uses innovative analytical and advanced neuroimaging techniques to demonstrate biochemical, molecular and gross anatomical changes that occur following CNS injury.

Throughout his studies, he has gained significant experience in various in vivo small and large animal models, including Parkinson's disease, stroke, traumatic brain injury and spinal cord injury. As a result, he is an expert in a variety of surgical techniques, including anaesthesia, laminectomy, osmotic mini-pump and brain infusion kit implantation, suturing, and euthanasia. Similarly, he has gained a wealth of experience in animal welfare and husbandry, as well as pre- and post-operative care, and various behavioural (functional) assessment models. In 2017, Ryan joined SAHMRI and the Neil Sachse Centre for Spinal Cord Research, to provide his expertise in SCI and other neurotrauma models in clinically relevant animal models.



## International Keynote Speaker

Associate Professor Amanda Kiliaan



Current positions:

Associate Professor (tenured) in (Neuro)anatomy and Neurosciences.

Principle Investigator at Donders Institute for Brain, Cognition & Behaviour

Principle Investigator at Radboud Alzheimer Centre

Principle Investigator at preclinical imaging centre PRIME Radboud University

Nijmegen Medical Centre, The Netherlands

Head research dept Anatomy Radboud University Nijmegen Medical Centre, The Netherlands.

Dr. Amanda Kiliaan (and the Kiliaan group) focusses on diet effects on brain structure and function in mice models for neurodevelopment and neurodegeneration, especially Alzheimer's disease, and has published many peer reviewed articles on the topic. The research is performed in the Preclinical Image Centre PRIME in the animal facilities of the Radboudumc where cutting edge translational neuroimaging data is combined with behaviour, cognition and motor skills.

Dr. Amanda Kiliaan is the principal investigator at the Radboud Alzheimer Centre and the renown Donders Institute for Brain Cognition and Behaviour, and works very close with clinical and industry partners showing the translational character of the research therewith establishing strong collaborations with European imaging centers, TNO and Food industries, and as well with Tecniplast to validate their digitally homecages, monitoring mice 24/7 (walking patterns, speed, behaviour) in home environment, to improve reliability/applicability for movement disorders, stroke and cognition research, therewith reducing the number of animals within the experiment and reducing their discomfort.

Dr. Amanda Kiliaan participates in international expert platforms on Nutrition and Brain, an International Think Tank on vascular, metabolic and AD contributions to dementia.

## Dr Lewis Vaughan

Lewis works as a welfare veterinarian for the University of South Australia and Flinders University. He is currently an Executive member of the Medicine and Management of Laboratory Animals chapter of the Australian and New Zealand College of Veterinary Scientists as well as a member of the Animal Welfare chapter in the College. He is the recipient of previous national and state training awards. If it weren't for COVID he would be traipsing around in the far reaches of Latin America getting lost in jungles and on mountains. Instead, he will be at the Animal Welfare Symposium discussing clinical assessment and intervention guidelines



## Amy Gathercole

After graduating with a Bachelor of Medical & Pharmaceutical Biotechnology from the University of South Australia in 2002, Amy began work at the Institute of Medical & Veterinary Science (IMVS) in the Infectious Diseases Division as a Diagnostic Scientist specialising in the design and validation of novel molecular diagnostic tests. Following various roles in the Virus Detection Laboratory, Amy moved from human diagnostic work to lab animal diagnostics.

In 2008 she was recruited as a Molecular Diagnostic Scientist for ComPath – a laboratory that specialises in the Health Monitoring of laboratory animals, before accepting the role of Manager in 2010 where she remains to this day.



## Carlee Mottley

Winner of the 2019 Tecniplast Australia Animal Welfare & Science Scholarship Research Grant category.

Carlee is an Animal Technician at the University of Wollongong. She holds a Bachelor of Animal Science where her final year involved designing and completing a research project about dairy cattle welfare in Pakistan, and she has previously worked as an Animal Technician at the CSIRO Australian Animal Health Laboratory. Carlee enjoys implementing novel initiatives and animal welfare improvements in her current role and is a proud pioneer of UOW's Rodent Rehoming Program, Training Program, Clinical Scoresheet Generator, and Openness Seminar.

Carlee is the recipient of the 2019 Tecniplast Australia Animal Welfare & Science Scholarship Research Grant category for her project 'Evaluation of Several Novel Alternatives to Forced Swim Test'.



## Dr Emma Greenwood

Emma Greenwood is an early career researcher, who has in her short career led research trials focusing on social behaviour in pigs and the effect of manipulating the neonatal microbiome in sheep.

She is currently in the process of completing a post-doctoral position focusing on effects of microbial manipulation on neonatal lamb growth and health and beginning a position as associate lecturer in subjects focusing on animal husbandry, behaviour, welfare and ethics in the new year. She was awarded a PhD in Veterinary Science, with Dean's commendation for doctoral thesis excellence in 2016, with a focus on pig behaviour and stress in group housing.



## Dr Malcolm France

Malcolm France is Director of Animal Services at UNSW and consultant veterinarian in the care and management of laboratory animals. He is also Chair of the University of Wollongong Animal Ethics Committee and a board member of ANZCCART where he is convenor of the Australian Openness Agreement project. Other appointments have included inaugural President, Registrar and Public Officer of ANZLAA, reviewer for the international journal Laboratory Animals, ad hoc site visitor for AAALAC International, member of the ICLAS regional committee, and secretary of the ANZCVS laboratory animal.



## Dr Alex Whittaker

Alexandra Whittaker is a senior lecturer in animal welfare and law at the University of Adelaide's School of Animal and Veterinary Sciences. Prior to her academic role she spent a number of years as a laboratory animal veterinarian in both the UK and Australia. She holds specialist level veterinary qualifications in animal welfare science and laboratory animal science through EU certifying authorities. Her research spans species but has had a predominant focus on laboratory animal welfare, in particular the identification and validation of methods to assess rodent pain and affective state. She also has a particular interest in the process through which research evidence gets implemented into practice through assimilation, dissemination efforts, and policy direction.





## Mike Hill



Mike has many years extensive experience in the management of animal facilities housing rodents, fish, poultry and farm animals in the UK and more recently at the University of South Australia, Adelaide. These have included Specific Pathogen Free (SPF), transgenic and conventional rodent and zebra fish colonies, SPF poultry and conventional farm animals for breeding purposes.

Mike also managed containment facilities for large animals at the Pirbright Institute working with such pathogens as Foot & Mouth Disease, Blue Tongue and other exotic farm animal diseases.

Mike was lucky see the many benefits that openness in animal research brought to our community having been instrumental in gaining membership to the "Concordant of Openness" through Understanding Animal Research (UAR) for his two previous places of employment in the UK.

Mike is delighted to be able to discuss the topic of openness at the forthcoming Tecniplast symposium.

## Paula Porter



Paula began her career as an animal technician in 1999 at the Institute of Medical and Veterinary Science. In 2006 she commenced teaching at TAFESA delivering training for the Diploma of Animal Technology. In 2015 Paula became coordinator of the course.

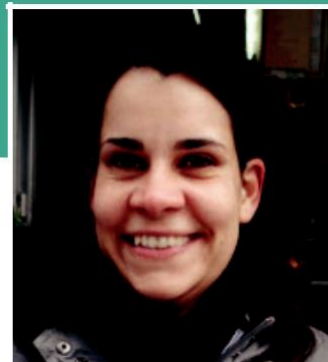
Paula has a Diploma in Positive Psychology and is passionate about educating others on how to prevent and recognise mental health issues in the animal research industry. Paula is also a general member on the ANZLAA executive committee



## Gnotobiotic Keynote Speaker

### Joana Bom

Joana has a degree in Biology and Master in Legal Medicine and Forensic Sciences/Forensic Genetics and is the Manager of the Axenic and Gnotobiology services of the Instituto Gulbenkian de Ciência (IGC) Mouse Facility, which includes production and maintenance of germ-free/axenic mouse colonies.



She is also the manager of the Mouse Facility laboratory and Staff (Technicians and Animal Care Technicians). Responsible for the Assisted Reproduction and Cryopreservation Services of the Mouse Facility (Strain Re-derivation, In Vitro Fertilization, Cryopreservation of mice embryos and sperm, strain rescue). Coordinator of Rodent Importation and Exportation processes.

From May 2005 to October 2007 Joana worked as a research technician at IGC, working with management of genetically modified mouse colonies, mouse genotyping, management of vasectomized males and pseudo-pregnant females, genetic handling of mouse embryos by nuclear microinjection of DNA and subsequent transfer to pseudo-pregnant females. Since April 2016, Instituto Gulbenkian de Ciência Animal Welfare Body (AWB) member, as person responsible for animal welfare. Since April 2019, Treasurer of the Portuguese Society of Laboratory Animal Sciences.

### Emily Duggan

Emily is the Senior Coordinator of the Gnotobiotic Animal Facility based at the Translational Research Institute (TRI). Following completion of a BSc(Hons) at the University of Queensland in 2000, Emily worked for 3 years validating transgenic mouse models in Prof Brandon Wainwright's laboratory at the Institute for Molecular Biosciences, UQ.



Between 2004 and 2016 Emily worked for Prof Ranjeny Thomas at the UQ Diamantina Institute. She worked on mouse models of rheumatoid arthritis and diabetes in the lab, also in an administrative capacity, managing animal ethics protocols and writing customised databases to handle information management for human clinical trials for new therapies to treat rheumatoid arthritis.

In addition, from 2008 to 2017 Emily took a second position with the University of Queensland Biological Resources department as the imports and exports officer, handling the logistics of all animal imports and exports across the University. In late 2016 Emily took over the coordination of a pilot gnotobiotic facility at the TRI which has now expanded this to be a fully operational facility. The TRI Gnotobiotic Facility provides researchers with the ability to conduct microbiota studies in a controlled system utilizing germ-free and gnotobiotic animal models.

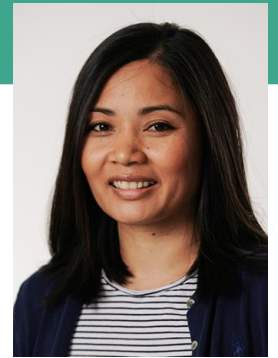
## Samay Trec

Senior Diagnostic Scientist, ComPath

Animal Import Officer, SAHMRI

Gnotobiotic Facility Manager, SAHMRI-PIRL

Bachelor of Medical and Pharmaceutical Biotechnology (Hons)



Samay finished her degree in Medical and Pharmaceutical Biotechnology at UniSA and has been working in small animal research since 2005, predominantly for Adelaide biotechnology companies. She started her career as an animal/laboratory technician performing drug efficacy studies in xenografted mouse models, then switched to vaccine efficacy studies. Samay joined SAHMRI in 2014 as Diagnostic Scientist at ComPath, where she advanced her skills in laboratory based assays- ELISA serology, PCR and microbiology. Samay was seconded to Acting Manager in 2016.

In December 2016, Samay was tasked with establishing a gnotobiotic facility for SAHMRI which eventuated August 2018. She is currently maintaining position as Senior Diagnostic Scientist with ComPath, coordinates animal imports for SAHMRI and is Manager for the Gnotobiotic Facility.

## Dr Miriam Lynn

Dr. Miriam Lynn is a molecular biologist with more than 15 years of research experience in the fields of genetics, proteomics and immunology. She completed her PhD in Trinity College Dublin; Ireland working in the field of parasitology and continued her studies with a postdoctoral position with the University of British Columbia in Canada. This was followed by a postdoctoral position at the National Children's Research Centre, Ireland, and an Experienced Researcher Role at a start-up company in Ireland.



Since 2014 Miriam has been a member of the Lynn EMBL Research group at SAHMRI, Australia. Here she works as part of a team that employs in vitro and in vivo experimental and clinical models coupled with systems biology approaches to investigate the interplay between the microbiome and the immune system. Miriam was joint first author of a recent publication, where we showed that early life antibiotic exposure in mice led to significantly impaired vaccine antibody responses to commercial vaccines administered to millions of infants worldwide (Cell Host Microbe, 2018). Miriam is continuing this research establishing Gnotobiotic models and clinical trial.

## RSVP

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To reserve your place at this exciting event, please email your **First Name, Last Name, Workplace Email Address & Current Workplace Details** to [events@tecniplast.com.au](mailto:events@tecniplast.com.au) and specify if you will be attending the symposium in person at the SAHMRI Auditorium or virtually via Zoom.

Attendance to the **Animal Welfare Symposium, Thursday, 13th May** is “Free of Charge” and includes a light morning tea and lunch for delegates attending in person.

Please RSVP by 30th April 2021 to secure your place [events@tecniplast.com.au](mailto:events@tecniplast.com.au)

Please note for delegates attending virtually via Zoom, the Zoom access link will be emailed to you within five (5) days of the event. The access link is non-transferrable and can only be used by the registered delegate.

## SAHMRI

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Our identity is inspired by a microscope image of a stylised cell.

A cell is an appropriate symbol because of our links to biology and because cells require linkages to other cells to provide structural support and carry nutrients and communications to neighbouring cells.

While our research themes operate independently, they have important links to each other. They share common objectives, facilities and knowledge. They are also linked to other health and medical research institutes in South Australia, interstate and overseas, sharing findings and working collaboratively.

But most importantly, our researchers are linked to the communities they serve. This ensures that all of our discoveries are transformed into better health outcomes and benefits for South Australians and others around the world.

Each theme is represented by a different colour, which in turn makes up a different section of our overall identity.

The iconic triangular-paneled façade of our new building on North Terrace is also reflected in the shapes of our new identity.

Our identity is a fitting representation of our values of excellence, imagination, courage, integrity and teamwork.

