



# SF-CaMM Research Symposium

## Thursday 10 October 2024

We are excited to invite you to our inaugural Sub-Faculty of Clinical and Molecular Research Symposium, incorporating the annual PhD Student Showcase Symposium in the morning, followed by an afternoon of highest impact research highlighting an amazing snapshot of the diverse research across our Sub-Faculty.

Join us to hear from our special guest speaker, Professor Steve Wesselingh, NHMRC CEO, followed by presentations from the highest impact researchers from our Sub-Faculty including the School of Clinical Sciences at Monash Health, Victorian Heart Institute, Monash Centre for Health Research and Implementation and Hudson Institute of Medical Research.

|                 |                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------|
| <b>DATE</b>     | Thursday 10 October 2024                                                                        |
| <b>TIME</b>     | 9:30 am – 5:00 pm                                                                               |
| <b>VENUE</b>    | Seminar Rooms 1 and 2, Level 2, Translational Research Facility (TRF), 45 Kanooka Grove Clayton |
| <b>RSVP</b>     | 4 October 2024                                                                                  |
| <b>REGISTER</b> | <a href="#">HERE</a>                                                                            |

### FOR MORE INFORMATION

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More details: [HERE](#)

# PROGRAM

## PHD STUDENT SHOWCASE SYMPOSIUM

| TIME              | PRESENTATION                                                                                                                                                                                                                    |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:30 – 9:45 AM:   | <b>Welcome and acknowledgements</b><br><br><b>Professor Eric Morand</b> Sub-Faculty Dean<br><b>Session Chairs:</b> Ashley Wong and Thuy Vy Nguyen (CAMMunity leaders)                                                           |
| 9:45 – 10:00 AM:  | <b>Beyond the cycle: Unveiling the endometrium's role in menstruation and pregnancy outcomes</b><br><br><b>Kirstin Tindal</b><br>Department of Obstetrics and Gynaecology                                                       |
| 10:00 – 10:15 AM: | <b>Simulation-based education for healthcare workers in the Pacific Islands</b><br><br><b>Samuel Robinson</b><br>Department of Paediatrics                                                                                      |
| 10:15 – 10:30 AM: | <b>The effectiveness of a 10-week family-focussed e-Health healthy lifestyle program for school-aged children with overweight or obesity</b><br><br><b>Diana Zhu</b><br>Department of Nutrition, Dietetics, and Food            |
| 10:30 – 10:45 AM: | <b>Cardiovascular screening in cardiovascular patients treated with immune checkpoint inhibitors</b><br><br><b>Dr Sean Tan</b><br>Victorian Heart Institute (VHI) [Medicine Monash Health]                                      |
| 10:45 – 11:15 AM: | <b>MORNING TEA BREAK – Quiz by Student Society, CAMMunity</b>                                                                                                                                                                   |
| 11:15 – 11:30 AM: | <b>Associating bacterial clades in the gut microbiome with paediatric inflammatory bowel disease</b><br><br><b>Sean Solari</b><br>CiiID, Hudson Department of Molecular and Translational Science                               |
| 11:30 – 11:45 AM: | <b>Inflammatory infertility: Casual pathways and the role of diet</b><br><br><b>Simon Alesi</b><br>Monash Centre for Health Research and Implementation (MCHRI)                                                                 |
| 11:45 – 12:00 PM: | <b>Moving the needle: Using endoscopic biopsies for molecular profiling to improve the diagnosis and management of pancreatic and biliary tract cancers</b><br><br><b>Dr Owen McKay</b><br>Department of Surgery, Monash Health |
| 12:00-12:15 PM:   | <b>Digital health interventions for the secondary prevention of stroke</b><br><br><b>Liam Allan</b><br>Department of Medicine Monash Health                                                                                     |

## 12:30 – 1:00PM: LUNCH SERVED IN TRF FOYER

### BEST OF THE BEST RESEARCH SHOWCASE SYMPOSIUM

| TIME            | PRESENTATION                                                                                                                                                                                                                                                                                    |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 – 1:05 PM: | <b>Welcome and acknowledgements</b><br><br><b>Professor Eric Morand</b> Sub-Faculty Dean<br><b>Professor Eugene Yafele</b> CEO Monash Health                                                                                                                                                    |
| 1:05 – 1:50 PM: | <b>NHMRC - What's next?</b><br><br><b>Guest speaker - Professor Steve Wesselingh</b><br>CEO, National Health and Medical Research Council                                                                                                                                                       |
| 1:50 – 2:10 PM: | <b>Lp(a): the latest target for treatment of dyslipidaemia</b><br><br><b>Professor Stephen Nicholls</b><br>Program Director, Monash Heart, Intensive Care and the Victorian Heart Hospital, Monash Health<br>Professor of Cardiology and Director, Victorian Heart Institute, Monash University |
| 2:10 – 2:30 PM: | <b>Synergistic anti-cancer activity in a single molecule</b><br><br><b>Professor Jake Shortt</b><br>Head of Haematology Research, Department of Medicine, School of Clinical Sciences<br>Director, Haematology Monash Health                                                                    |
| 2:30 – 2:50 PM: | <b>Redesigning pregnancy care</b><br><br><b>Associate Professor Kirsten Palmer</b><br>Department of Obstetrics and Gynaecology, School of Clinical Sciences                                                                                                                                     |
| 2:50 – 3:10 PM: | <b>AFTERNOON TEA BREAK</b>                                                                                                                                                                                                                                                                      |
| 3:10 – 3:30 PM: | <b>Interferon-<math>\epsilon</math> is a tumour suppressor and restricts ovarian cancer</b><br><br><b>Dr Nicole Campbell</b><br>Senior Postdoctoral Scientist, Centre for Innate Immunity and Infectious Diseases<br>Hudson Institute of Medical Research                                       |
| 3:30 – 3:50 PM: | <b>Acute stroke trials</b><br><br><b>Professor Henry Ma</b><br>Director Neurology, Monash Health<br>Adjunct Professor, Department of Medicine, School of Clinical Sciences                                                                                                                      |
| 3:50 – 4:10 PM: | <b>The International Evidence-Based Guideline on PCOS</b><br><br><b>Dr Anju Joham</b><br>Monash Centre for Health and Research Implementation<br>Endocrinologist, Monash Health                                                                                                                 |
| 4:10 – 5:00 PM: | <b>CLOSING, FOLLOWED BY REFRESHMENTS AND PRIZES</b>                                                                                                                                                                                                                                             |

## SPEAKER BIOS

### Kirstin Tindal

PhD Candidate, Department of Obstetrics and Gynaecology (Ritchie Centre)



Kirstin Tindal is a PhD Candidate at the Ritchie Centre, Hudson Institute of Medical Research, enrolled through the Department of Obstetrics and Gynaecology. Kirstin successfully completed a Bachelor of Science (Genetics) at the University of Melbourne, and a Graduate Diploma of Reproductive Science at Monash University. She works as a Consumer Engagement Officer with the Stillbirth Centre of Research Excellence (CRE) and sits on the Stillbirth CR Steering Committee. For her PhD, she is studying the association between menstruation and pregnancy outcomes. By working with consumers and investigating novel ways to understand the endometrium's contribution to adverse pregnancy outcomes, Kirstin hopes that her research can contribute to a reduction in stillbirth and preterm birth rates.

#### Abstract

**Introduction:** Abnormal menstruation can be indicative of endometrial pathologies (endometriosis, adenomyosis, fibroids, polyps, pelvic inflammatory disease), which are associated with adverse pregnancy outcomes (preeclampsia, fetal growth restriction, antepartum haemorrhage, preterm birth, stillbirth). Given the latest diagnosis, it is likely that many women navigate their reproductive life unaware of an underlying endometrial pathology. Limited research has investigated whether abnormal menstruation itself is a risk factor for pregnancy. This study holistically explores menstrual and reproductive history to examine whether adverse pregnancy outcomes are associated with abnormal menstrual characteristics, irrespective of a diagnosed endometrial disorder.

**Methods:** Cross-sectional study from March to September 2022 of women in Australia aged 18 years or over, who had at least one pregnancy. A comprehensive survey investigated menstrual, obstetric, and gynaecological history.

**Results:** 232 complete responses were received. Over a third (36%) had experienced an adverse pregnancy outcome and a quarter had a diagnosed endometrial pathology, of which nearly three-quarters were diagnosed after a pregnancy. Those with diagnosed endometrial pathologies were more likely to experience an adverse pregnancy outcome (40%), however, 34% of those without an endometrial pathology also experienced an adverse pregnancy outcome. In the absence of an endometrial disorder, participants with adverse pregnancy outcomes reported shorter (11%; 1-3 days of bleeding) and more irregular (17%;  $\pm >7$  days of expected) periods compared to those with uncomplicated pregnancies (6% and 11% respectively). Sixty-five percent of women indicated that their menstrual characteristics changed after pregnancy somehow.

**Conclusions:** Whilst assessing menstruation regarding pregnancy may seem contradictory, they are inherently linked processes of the endometrium. Abnormal menstrual characteristics are evidence in those who experience adverse pregnancy outcomes, however, better understanding of how menstruation changed post-pregnancy is required. Investigating menstruation prospectively has the potential to identify women at-risk of adverse pregnancy outcomes and aid in the efficient diagnosis of endometrial pathologies.

## Samuel Robinson

PhD Candidate, Department of Paediatrics



Samuel is an MD-PhD candidate working at Monash Children's Simulation. His academic interests include health professions education and programme evaluation. For his PhD, he is investigating how to use simulation-based education to train healthcare workers in the Pacific Islands.

Samuel was this year's Sub-Faculty CaMM winner and Faculty MNHS finalist in the Monash University's Three Minute Thesis (3MT) competition. Samuel is a previous Global Surgery Chair of the Australasian Students' Surgical Association, the Australian chapter of the International Student Surgical Network. Samuel is also employed as biostatistics teaching associate at Monash University.

### Abstract

Simulation-based education (SBE) is a technique used to replicate a clinical environment to teach skills in a controlled setting, and is increasingly used to train healthcare workers to enhance clinician preparedness and patient safety. The World Health Organisation has identified SBE as a method of improving workforce capacity in low- and middle-income countries (LMICs), and regional stakeholders from the Pacific have identified it as a priority moving forward. Despite this, there is very little literature surrounding SBE in the Pacific Islands, beyond a small number of programmes that have incorporated SBE as part of their intervention. The overarching aim of this research was to understand how SBE can best be used to improve clinical outcomes in the Pacific Islands. After reviewing the existing literature, the first phase of the research involved an investigation of the perspectives of Pacific Island healthcare workers using a survey (n=56) and focus groups (n=16). These studies revealed that there is demand for greater access to SBE among the sampled participants, as well as numerous factors that affect its uptake and success. Following this, we implemented a simulation-based education programme focussed on acute paediatric care at ANGAU Memorial Hospital in Lae, Papua New Guinea. Other training resources, including online learning modules, were developed. The study is being evaluated using pre-and post-audit of paediatric patients at the hospital. The final phase of this project is a realist evaluation of the simulation programme at ANGAU Memorial Provincial Hospital conducted by Monash Children's Simulation, focussing on the question "What works, for whom, and in which circumstances?". A total of 22 interviews were conducted with ANGAU faculty and learners, and are currently undergoing analysis.

## Diana Zhu

PhD Candidate, Department of Nutrition, Dietetics, and Food



Diana is an Accredited Practising Dietitian and PhD candidate from the Department of Nutrition, Dietetics, and Food. Diana aims to simplify nutrition and empower individuals with the tools to adapt an inclusive relationship with food, and a healthy lifestyle.

Diana has research interests in paediatric nutrition, e-Health, and health equity. Her PhD project explores the potential of family-focussed e-Health (web-based) interventions to improve the treatment of childhood obesity.

### Abstract

**Introduction:** Unprecedented high rates of childhood obesity persist globally, with an increasing number of children with severe obesity. Effective treatment services, however, are mostly unavailable or inaccessible for families with children needing treatment. Using technology to transform interventions conventionally delivered in-person, and providing electronic health (e-Health) interventions may address limitations and increase the effectiveness of current childhood obesity treatment.

**Methods:** A randomised control trial (RCT) with a waitlisted control group evaluated the effectiveness of a 10-week family-focussed e-Health (web-based) healthy lifestyle program for children aged 7-13 years, with overweight or obesity, and their families in Victoria. Families self-reported outcome measures through online surveys at baseline and 10 weeks. Outcome measures included change in children's body mass index (BMI) z-score, waist circumference, dietary intake, physical activity, and quality of life over 10 weeks.

**Results:** A total of 102 children (85 families) completed the RCT. A clinically meaningful decrease in BMI z-score was observed in participating children after receiving the web-based program (mean difference in change in BMI z-score intervention vs control group = -0.1; 95% confidence interval, -0.2 -0.0). The web-based program was also effective in improving children's quality of life and health-related behaviour changes (dietary intake and physical activity)

**Conclusion:** A 10-week web-based healthy lifestyle program effectively improved health-related outcomes in children with overweight or obesity in the short-term. Findings suggest that e-Health interventions, including a low-intensity program that requires minimal contact time with health professionals online, have the potential to upscale and enhance the effectiveness of conventional treatment services.

## Dr Sean Tan

Cardiologist and PhD Candidate, Victorian Heart Institute (VHI, Medicine)



Dr Sean Tan is an academic cardiologist based at the Victorian Heart Hospital. He graduated from Monash University in 2014 and completed his cardiology training in 2021. Dr Tan is currently undertaking a PhD through the Victorian Heart Institute in the emerging field of Cardio-Oncology, evaluating cardiovascular risk identification and prevention in patients treated with immune checkpoint inhibitors for cancer.

Dr Tan is the recipient of a National Health and Medical Research Council (NHMRC) and National Heart Foundation joint postgraduate scholarship and has also been recognised with an Emerging Researcher Fellowship from Monash Health.

### Abstract

Immune Checkpoint Inhibitors (ICI) are therapies that harness the body's immune system to combat cancer. Despite revolutionising the treatment of cancer, ICIs are associated with increased risk of cardiovascular (CVD) in cancer survivorship. Modifiable cardiovascular risk factors (CVRF) can further contribute to CVD risk during cancer survivorship but are not entirely routinely screened in patients with cancer. With the expanding use of ICIs leading to improved long-term survival, CVRF identification and control will be paramount in the care of cancer patients.

Several challenges hamper the implementation of CVD prevention among cancer patients treated with ICIs in clinical practice. The CVRF profile of ICI-treated patients remains uncertain due to a lack of CVRF reporting in landmark ICI trials. Patients with CVD are often excluded from ICI trials and thus may not reflect real-world patients treated with these agents. Among real-world patients treated with ICIs, CRFs are often underrecognized and undertreated due to deficiencies in existing healthcare systems, which are often not designed to holistically and simultaneously address both oncological and cardiovascular aspects of care required by cancer patients.

The SOCRATES trial aims to identify the prevalence of undiagnosed CVRFs and CVD among patients with melanoma treated with ICIs. This novel multi-centre Cardio-Oncology trial is ongoing across Australia and will provide insight into the importance of CVRF screening among ICI-treated patients. For future implementation, CVRF screening can be opportunistically incorporated into existing cancer care pathways. Blood pressure measurements are routinely obtained during each cycle of ICI treatment and can be repurposed for hypertension screening and surveillance. Periodic screening for hypercholesterolaemia and diabetes can be added onto routine blood tests performed regularly as part of cancer care. Dedicated Cardio-Oncology services can be developed to address the systematic gap in cardiovascular healthcare provision to cancer patients with the dual competing risks of cancer and CVD.

## Sean Solari

PhD Candidate, CiiD - Hudson Department of Molecular and Translational Science



Sean completed a Bachelor of Science Advanced – Research at Monash University in 2021 majoring in mathematics and physics, with an Honours under the joint supervision of A/Prof Jonathan Keith and A/Prof Sam Forster based in the School of Mathematics.

Sean is currently in his third year of a PhD in the Centre for Innate Immunity and Infectious Diseases at the Hudson Institute. His project within the Microbiota and Systems Biology lab is a continuation of a UROP with Sam, developing bioinformatics techniques to analyse molecular datasets and identify potential roles of the gut microbiome in diseases such as IBD.

### Abstract

The success of faecal microbiota transplant (FMT) to induce remission in ulcerative colitis highlights the gastrointestinal microbiome as a key target for therapeutic intervention in inflammatory bowel diseases (IBD). However, FMT is a broad-spectrum treatment with limited efficacy, and a detailed model of how changes in the microbiome confer disease remission remains elusive.

Metagenomic analysis is a critical tool for assessing microbiome composition, comprising bioinformatic analysis of DNA sampled from the community, and has successfully identified microbiome compositions associated with IBD. These workflows most frequently rely on microbial taxonomy, seeking to identify specific taxa whose relative abundance correlates with inflammatory phenotypes in the host. While these analyses have identified species associated with disease, taxonomy may be limiting our capacity to translate these associative results into insights regarding mechanistically how microbiota are contributing to IBD. This is because bacterial taxa share a vast array of genes and functions that are not reflected in their taxonomy, limiting our capacity to detect cases where such functions are relevant to disease.

We developed a software tool, Expam, that uses microbial phylogeny instead of taxonomy to assess community composition, as phylogeny better reflects these complex molecular relationships. Critically, this creates an opportunity to investigate potential roles for a much broader array of microbial genes than would be possible using taxonomy. Applying Expam to a paediatric IBD cohort (n=100; 58 IBD, 42 control) who underwent matched metagenomic and host transcriptional profiling revealed phylogenetic clades of bacteria associated with inflammatory responses in the host. In particular, subgroups of *Enterococcus* were found to associate positively and negatively with inflammatory signatures in a clade-specific manner. Now, we are developing bioinformatics techniques to identify genes associated with these clades and generate hypotheses about their potential roles in inflammation. Ultimately, this approach seeks to identify key IBD-associated activity in the microbiome to progress the development of targeted microbiome-based interventions.

## Simon Alesi

PhD Candidate, Monash Centre for Health Research and Implementation (MCHRI)



Simon is a third-year PhD candidate at the Monash Centre for Health Research and Implementation (MCHRI). He completed a Bachelor of Science (Honours) in 2020 at Monash University before starting his PhD in 2022. His PhD research explores the role of inflammation in fertility and reproductive health, and the potential benefits of anti-inflammatory diets in this context.

Simon employs diverse methodologies in his research, including systematic reviews/meta-analyses, Mendelian Randomisation, large-scale epidemiological data analysis, and analysis of biospecimens from multi-centre clinical trials. Simon has published in world-leading journals in the field including Human Reproduction Update, Fertility & Sterility, and The Lancet's eClinical Medicine, and was involved in the 2023 International PCOS Guideline.

### Abstract

**Background:** Infertility, defined as the inability to conceive after >1 year of unprotected intercourse, affects 48M couples worldwide. Inflammation is a critical mechanism for fertility, facilitating ovulation, implantation and regulating immune responses; however, imbalanced inflammatory processes, whether excessive or insufficient, can disrupt these functions and impair fertility. Dietary interventions, especially those targeting inflammation, have shown promise in improving fertility and reproductive outcomes; yet, the role of diet and inflammation in the context of infertility remains unclear. We aimed to test the hypothesis that inflammation is associated with infertility and reproductive disorders, and that dietary strategies, particularly anti-inflammatory diets, may have therapeutic potential for improving reproductive outcomes.

**Methods:** To address these aims, we scoped the literature to examine whether specific nutritional/dietary approaches influence fertility and reproductive conditions. We then leveraged large-scale observational data from the Australian Longitudinal Study on Women's Health (ALSWH, n=5,489) to examine relationships between anti-inflammatory diets and infertility. Finally, we used Mendelian Randomisation (MR) techniques to explore inflammation as a potentially causal mechanism linking diet with infertility or reproductive disorders.

**Results:** The scoping reviews identified that, among the various dietary patterns, adherence to the Mediterranean diet (MedDiet), the most widely studied anti-inflammatory diet, was most consistently associated with improved fertility. Cross-sectional and principal component analyses of ALSWH data showed that diets characterised by a lower dietary inflammatory index, greater adherence to MedDiet principles, and compliance with the Australian Guideline for Healthy Eating, were associated with a reduced likelihood of infertility. In MR analyses, higher levels of specific inflammatory markers, particularly monocyte chemoattractant protein-1 (MCP-1) and interleukin (IL)-8, were causally associated with anovulatory infertility, whereas higher IL-12 and IL-18 were causally associated with reduced infertility.

**Conclusion:** This research highlights the importance of inflammation in the aetiology of infertility and reproductive disorders and offers insights into the potential benefits of anti-inflammatory diets in reproductive health.

## Dr Owen McKay

**Gastroenterological, Interventional Endoscopist, and PhD Candidate, Department of Surgery  
Monash Health**



Dr Owen McKay is a gastroenterologist and interventional endoscopist working at Monash Health having received his fellowship to the RACP in 2019. He has completed two interventional endoscopy fellowships at Westmead Hospital (2020) and then Monash Health (2021). Dr McKay has special interest in interventional endoscopy including EUS, ERCP, and luminal work. He then enrolled to do a PhD with Dr Daniel Croagh and Associate Professor Sally Bell through Monash University focussing on endoscopic tissue acquisition as a platform for molecular profiling to improve the diagnosis and management of pancreatic and biliary tract cancer. In this time away from work, he likes to spend time with his young family and travel.

### **Abstract**

Pancreatic Ductal Adenocarcinoma (PDAC) is a highly lethal malignancy typically diagnosed at an incurable stage of disease. In 2020, it was the eight most common cancer diagnosis in Australia accounting for the third most cancer related deaths. It is associated with a very poor prognosis and remains largely refractory to systemic therapies. Similarly, cholangiocarcinoma (CCA) or biliary tract cancers represent a less common but important cause of cancer related mortality. Surgical resection remains the only potentially curative option but the majority (>70%) of patients present with advanced, inoperable disease. Median survival is 1-2 years with current systemic therapies.

Precision oncology using molecular profiling to inform more personalised therapy for patients has become an important part of the treatment algorithms for most types of cancers. Historically, genomic profiling of PDAC and CCA has relied on surgical resection specimens or FFPE tumour sections to obtain tumour material. Given that most patients will not have surgery, a major obstacle to implementation of precision medicine in PDAC and CCA has been the difficulty in obtaining high quality tumour-derived genetic material to complete molecular profiling.

Endoscopic Ultrasound (EUS) with fine needle biopsy is a well-established biopsy technique with a clear advantage of being able to be utilised in patients at any stage of disease. Similarly, endoscopic retrograde cholangiopancreatography directed cholangioscopy (ECRP + Spyglass) now allows direct visualisation of intra-ductal cholangiocarcinoma lesions. Accordingly, my PhD is built around two prospective cohort studies evaluating the role of endoscopic tissue acquisition as a pathway to provide suitable tumour derived genetic material to enable molecular profiling for PDAC and CCA patients. The two trials: Endoscopic Ultrasound Molecular Evaluation of Pancreatic Cancer (EU ME PC 2) using residual liquid cytology (supernatant) and the Australian Comprehensive Molecular Evaluation of Advanced Biliary Cancer (ACME ABC) are currently active and enrolling at Monash and other sites. We aim to close recruitment for both of these trials in the next month and publish the results from these trials as part of my PhD. These trials will generate subsequent further trials and projects across a similar theme with the goal of integrating molecular testing into standard of care for these patients.

## Liam Allan

PhD Candidate, Department of Medicine Monash Health



Liam is a third-year PhD Candidate in the Translational Public Health and Evaluation Division, led by Professor Dominique Cadilhac, at Monash University. Liam is also affiliated with the Australian e-Health Research Centre from the CSIRO. His research investigates the use of digital health to better support people after stroke to manage their health and reduce their risk of recurrent event, focussing on feasibility, potential effectiveness, and associated delivery costs.

### Abstract

Survivors of stroke are at high risk of a recurrent vascular event, therefore prevention of a recurrent stroke, i.e., secondary prevention, is a major priority. This requires the uptake of healthy lifestyle changes, ongoing use of stroke prevention medication, and self-management strategies. It has been estimated that adoption of healthy lifestyle changes and use of medication can synergistically prevent ~80% of recurrent vascular events after stroke.

However, the uptake of these strategies is complicated by rapid discharge times with little education and psychosocial challenges following stroke. Programs that promote secondary stroke prevention can be used to better support the transition from hospital into the community, as well as life in the community after stroke. These programs have been associated with better uptake of healthy lifestyle behaviours and medication adherence, leading to improved health outcomes. Despite this, provision, and access to these are suboptimal. Furthermore, barriers to accessing secondary prevention programs include geographical location, language barriers, and lack of resources.

Advances in digital health may offer a potential solution, with the emergence of novel technologies that can be used to support the delivery of healthcare in ways that would have previously been implausible. Digital health interventions have been effectively delivered to improve biological parameters, including for reductions in blood pressure, glycaemic control in diabetes mellitus, and diagnoses and management of atrial fibrillation. These interventions have also been used to promote lifestyle changes, e.g., physical activity, healthy dietary intake, and reduced consumption of alcohol and cigarettes.

Evidence for the use of digital health for among people living with stroke remains limited. In order to understand if digital health interventions could be used to improve secondary prevention of stroke and access to evidence-based care, my programme of research will investigate the feasibility, potential effectiveness, and the costs associated with program delivery.

## Professor Steve Wesselingh

CEO, National Health and Medical Research Council



Professor Wesselingh took up the position of the CEO at NHMRC in August 2023. The CEO is the accountable authority for NHMRC under the *Public Governance, Performance and Accountability Act 2013*.

Professor Wesselingh is an infectious diseases physician and researcher in HIV, vaccine development and the impact of the microbiome on human health. He undertook his undergraduate and doctoral training at Flinders University/Flinders Medical Centre in South Australia and his post-doctoral training at Johns Hopkins in the United States.

Until mid-2023, Professor Wesselingh was the inaugural Executive Director of the South Australian Health and Medical Research Institute and the Research Director of Health Translation SA. He was also a member of NHMRC Council, Chair of Research Committee, and the president of the Australian Academy of Health and Medical Sciences.

Professor Wesselingh brings a wealth of medical experience, clinical leadership as well as national and international success. Between 2007 and 2011, he was Dean of the Faculty of Medicine, Nursing and Health Sciences at Monash University. From 2002 to 2007, he was Director of the Burnet Institute an independent medical research institute specialising in infectious diseases, immunology and global health.

Throughout his career, Professor Wesselingh has consistently worked towards the integration of high-quality medical research with health-care delivery, leading to improved health outcomes for Australia and the poorly resourced countries of the region.

## Professor Stephen Nicholls

**Program Director, Monash Heart, Intensive Care and the Victorian Heart Hospital, Monash Health  
Professor of Cardiology and Director, Victorian Heart Institute, Monash University**



Professor Stephen Nicholls is Program Director of Monash Heart, Intensive Care and the Victorian Heart Hospital at Monash Health and Professor of Cardiology and Director of the Victorian Heart Institute at Monash University. He is a preventive cardiologist, whose research interests span the translational spectrum with a focus on the impact of metabolic risk factors on atherosclerosis, plaque imaging, leadership of clinical trials of novel therapies and development of research acceleration platforms to deliver research discovery to impact.

His research output includes having received more than \$165M in funding and published more than 1160 peer reviewed manuscripts, book chapters and conference proceedings. He is the immediate Past President of the Cardiac Society of Australia and New Zealand, Past-President of the Australian Atherosclerosis Society and Founding Chair of the Asia Pacific Cardiometabolic Consortium.

He is a Fellow of the Australian Academy of Health and Medical Sciences, has received research prizes from the Royal Australasian College of Physicians, Cardiac Society of Australia and New Zealand and the European Atherosclerosis Society and has been recognised by Clarivate as one of the World's Most Influential Researchers in Clinical Medicine.

## Professor Jake Shortt

**Head of Haematology Research Monash University**

**Director, Haematology Monash Health**



Professor Jake Shortt is Clinical Director of Monash Health Haematology with subspecialty interests in leukaemia, lymphoma, myelodysplasia and myeloma. He is co-appointed to Monash University as the Head of Haematology Research within the Department of Medicine at the School of Clinical Sciences and as an Adjunct Clinical Professor at the University of Melbourne in the Sir Peter MacCallum Department of Oncology.

Professor Shortt heads the 'Blood Cancer Therapeutics Laboratory' in the Monash Health Translation Precinct, seeking to discover new blood cancer treatments and bring them to the clinic. His research program extends from drug discovery and preclinical modelling to early and late phase clinical trials. His research program is supported by an NHMRC Investigator Grant and funding from the US Leukaemia and Lymphoma Society and National Foundation for Medical Research and Innovation.

Associate Professor Kirsten Palmer

**Deputy Head, Department of Obstetrics and Gynaecology, Monash University**  
**Head, Maternal Fetal Medicine, Monash Health**



Associate Professor Kirsten Palmer is a clinician researcher. She is Head of Maternal Fetal Medicine at Monash Health and Deputy Head of the Department of O&G at Monash University. She co-leads the Pregnancy Discovery and Translational Research Collaborative, a research team focusing on reducing the impact of major pregnancy complications, such as fetal growth restriction and preeclampsia.

Kirsten leads several clinical trials, including the world first trial of melatonin for fetal neuroprotection in early-onset fetal growth restriction. She led the implementation of telehealth in pregnancy care during the COVID-19 pandemic and continues to explore digital tool improvements to enhance access and equity in pregnancy care. She co-chairs the Interdisciplinary Maternal and Perinatal Australasian Collaborative Trials network and is a member of the Consultative Council of Obstetric and Paediatric Morbidity and Mortality stillbirth sub-committee.

She is absolutely passionate about improving the clinical care for pregnant women and advancing knowledge to achieve this. A passion made all the stronger thanks to her two incredible children who are a constant reminder as to what a privilege and gift parenthood is.

## **Dr Nicole Campbell**

**Postdoctoral Scientist,**

**Regulation of Interferon and Innate Signalling, Hudson Institute of Medical Research**



Dr Campbell leads efforts within Prof Hertzog's lab to characterise the immunoregulatory functions of interferon epsilon in the peritoneal cavity, and its potential as a novel therapy for ovarian cancer.

A senior postdoctoral researcher working on the immunomodulatory properties of type I interferons, Dr Campbell's current research is centered on interferon epsilon – a unique type I interferon discovered by Prof Paul Hertzog's laboratory at Hudson Institute, which is constitutively expressed under hormonal control in the female reproductive tract.

Dr Campbell obtained her PhD in Immunology at Trinity College Dublin, Ireland in 2018, where she studied the anti-inflammatory functions of the enzyme heme oxygenase 1. In 2019 she joined the laboratory of Prof Paul Hertzog at Hudson Institute, where she has since led studies on interferon epsilon in ovarian cancer, interferon signalling dynamics, and the innate immune response to COVID-19.

In 2023 Dr Campbell was selected as one of six Hudson Institute Emerging Leaders, and awarded a Pilot Award from the United States Department of Defense Ovarian Cancer Research Program worth over \$500,000 (AUD).

## Professor Henry Ma

**Director Neurology, Monash Health**

**Adjunct Professor, Department of Medicine, School of Clinical Sciences, Monash University**



Professor Henry Ma is Director of Neurology and Stroke at Monash Health and Adjunct Professor of Medicine at Monash University. He was previously Director of Physician Training at Monash Health. Professor Ma is a senior member of the National Examiner Panel and Adult Medicine Division Basic Training Committee for the Royal Australasian College of Physician (RACP). He undertook his doctoral thesis on imaging of ischaemic penumbra with Profs Donnan and Davis. Professor Ma's work on persistence of penumbra beyond the traditional 3-hour time-frame has generated the idea for the EXtending the time for Thrombolysis in Emergency Neurological Deficits (EXTEND)-IV trial. He presented the final result for the EXTEND-IV trial at the World Congress of Stroke in October 2018. Professor Ma is a clinician and educator and has been instrumental in setting up the Australasian Stroke Academy (ASA) to educate and train the new generation of stroke physicians. He currently serves as Associate Editor of the journals Stroke and Frontiers in Neurology.

Professor Ma has been instrumental in setting up collaborative multicentre clinical trials and observational studies as evidenced by his high productivity, role as co-chair of the Australian Stroke Trial Network (ASTN). He is a keen advocate in the use of amnion stem cell in neurological diseases such as stroke and multiple sclerosis. He is a chief investigator on a NHMRC sponsored Phase 1 amnion stem cell trial of stroke (I-ACT), starting in February 2019. His major research skill is in the clinical trials and penumbral imaging. He is Principal Coordinator of the multicentre trial of the clot-busting drug tissue plasminogen activator, EXTEND-IV. The trial is being conducted in Australia, Europe and Asia. The success of this trial has led to change in guidelines in Europe and Australia. Professor Ma's role in ASTN puts him in an ideal position to promote this trial to other sites in Phases II and III. He plays a key role in evaluation of biomarkers and immune dysfunction using data from START-EXTEND trial.

In addition to Stroke research activities, Professor Ma has been setting up Department of Neurology as an academic unit with strength in Epilepsy, Movement Disorders, Neuroimmunology/ Multiple Sclerosis, Neuro-degenerative medicine, Behavioural Neurology, Neuro-ophthalmology, Neuro-otology and Neuro-oncology.

## Dr Anju Joham

**Senior Research Fellow, Monash Centre for Health Research & Implementation**  
**Endocrinologist, Monash Health**



Dr Anju Joham is a Senior Research Fellow at Monash at the Monash Centre for Health Research and Implementation, Monash University. She is an endocrinologist at Monash Health. Dr Joham was awarded her PhD focusing on Polycystic Ovary Syndrome, obesity and insulin resistance in 2015. During her PhD, she was involved in a mechanistic insulin resistance study that examined insulin resistance in lean and obese women with PCOS compared to controls. She also worked on a large epidemiological study, the ongoing Australian Longitudinal Study on Women's Health (ALSWH). Key areas examined were PCOS prevalence, key predictors of PCOS, the relationship of PCOS to obesity and reproductive and metabolic complications.

In her postdoctoral studies, Dr Joham worked with two large longitudinal cohort studies, the ALSWH and the Raine cohort from Western Australia to understand the interplay of body weight in the development of metabolic, reproductive and psychological sequelae in women with PCOS compared to women without PCOS. Dr Joham continues to work with cohort studies with the aim of studying the natural history of PCOS over the reproductive lifespan from adolescence, young adulthood to menopause.

Dr Joham established a statewide multidisciplinary Polycystic Ovary Syndrome (PCOS) Service based at Monash Health in 2018 in response to consumer needs identified following stakeholder engagement. She was the Deputy Director for the 2023 International Evidence-Based Guideline for the assessment and management of polycystic ovary syndrome, which is designed to provide clear information to assist shared decision-making and support optimal patient care and better health outcomes.