



THE UNIVERSITY OF
SYDNEY

—
Westmead Applied
Research Centre

Westmead Applied Research Centre in review: 2018 – 2020





This year, 2020, has been exceptional and challenging. As we all collectively respond to the COVID-19 pandemic, we have demonstrated our agility and adaptability as well as the important role digital health plays in the community. It has been a privilege to note all our achievements since we officially launched in August 2018.

The Westmead Applied Research Centre (WARC) was established by the University of Sydney in collaboration with the Western Sydney Local Health District (WSLHD). Its main goal to conduct clinical and translational research to address the causes of chronic disease, particularly the specific needs and circumstances of patients and consumers in western Sydney. Chronic disease is Australia's biggest health challenge. With half of all Australians living with a chronic disease and many affected by more than one disease, there is growing need for our health system to deliver improved outcomes while maintaining financial sustainability. Our Centre, located within the Westmead health precinct, is well positioned to be instrumental in discovering and developing new ideas and interventions and also in facilitating strong partnerships to deliver and evaluate innovative models of care in the community.

My sincere thanks to the members of our Advisory Board and all our researchers for their guidance, support, and stewardship of WARC's vision. Thank you to all our research and professional staff and all our research partners and funders that helped in our fight against heart disease and other chronic diseases.

Professor Clara Chow
MBBS, PhD, FRACP, FCSANZ, FESC, GAICD
Academic Director, WARC
Clinical Lead, Community Based Cardiac Services,
Westmead Hospital



Almost half of Australians have chronic illnesses such as cardiovascular disease, chronic pulmonary disease, diabetes and mental health conditions



One in four has at least two of these illnesses, and these conditions frequently share common causes



Cardiovascular disease is the most common chronic illness, and is the leading cause of death in Australia (including one-third of all deaths among women)

Our Mission & Focus

WARC's goal is to create, implement and evaluate innovative clinical and digital health approaches to cardiometabolic and other chronic conditions for consumers across their life course.

WARC celebrates a research approach that thinks and acts flexibly, aims to do more with less, embraces disruptive technology in health care, sees co-design and partnership as necessities for translation and impact, and consistently views its activities through the lens of value and equity.



Simple, low cost

Our simple, low cost solutions can be easily scaled to reach large populations



Accessible

Our solutions are accessible for people of all socio-economic backgrounds



High quality

We produce high quality programs and interventions for the best value



Innovative

We innovate to create solutions with high impact

WARC in numbers

\$30m+
Total
funding

60+
Research
projects

200+
Publications

20+
HDR
students

69%
female employees
(including all-female
management
team)



“It has been a privilege to be part of the WARC PhD ECR group this year. It's my favourite lunchtime Zoom meeting!

I've been welcomed and challenged to learn more about robust research methodologies from the wonderful group of post-docs and fellow PhD candidates in the group.”

Rebecca Chen
PhD Candidate

WARC Governance

WARC comprises a diverse team with expertise that spans medicine, allied health, science, law, biostatistics, IT, finance and business. Our core operations team enables our researchers to focus on research activities. The experience, insight and support from our Advisory Committee and Executive Research Committee have been crucial in WARC's continuing growth and achievements.

WARC Management Team



Prof. Clara Chow
Academic Director



Prof. Julie Redfern
Deputy Director



Tara Czinner
Chief Operating Officer



Dr Marina Ali
Clinical Trials Service Manager



Caroline Wu
Research Administrative
Manager



Simone Marschner
Senior Biostatistician



Annelise Barkhuizen
Executive Assistant



Elizabeth Valle
Administrative Assistant

WARC Advisory Committee



Prof. Duncan Ivison
Committee Chair
Deputy Vice
Chancellor, Research



Prof. Louise Baur
Head of Child &
Adolescent Health,
Sydney Medical School,
Head Children's Hospital
Westmead Clinical School



Prof. Cheryl Jones
Head of School and
Dean, Sydney Medical
School, Faculty of
Medicine & Health



Prof. Garry Jennings AO
Executive Director,
Sydney Health
Partners



Emeritus Prof. Stephen Leeder*
Public Health, School of
Public Health Menzies
Centre for Health



Graeme Loy
Chief Executive, WSLHD



Dr Graham Mann*
Co-Director, Centre for
Cancer Research, WIMR,
Chair, University of Sydney
Cancer Research Network



Prof. Chris Peck
Director Westmead
Initiative and Vice-
Chancellor's representative
at Westmead



Prof. Tim Usherwood
Head of Westmead Clinical
School and Professor of
General Practice, Westmead
Clinical School

* previous committee member

WARC Executive Research Committee and Principal Investigators



Prof. Richard Lindley
Committee Chair
Geriatrics and Stroke
Physiology



Prof. N Wah Cheung
Endocrinology



A/Prof. James Chong
Cardiology



Prof. Clara Chow
Cardiology



A/Prof. Elisabeth Elder
Specialist Breast
Surgery



A/Prof. Pramesh Kovoov
Cardiology



A/Prof. Saurabh Kumar
Cardiology &
Cardiac
Electrophysiology



A/Prof. Vincent Lee
Nephrology



Prof. Alistair McEwan
Biomedical
Engineering



Prof. Julie Redfern
Physiotherapy & Allied
Health



Prof. Anthony Rodgers
Epidemiology & Public
Health, The George
Institute



Prof. Tim Shaw
Digital Health



Dr Aravinda Thiagalingam
Cardiology

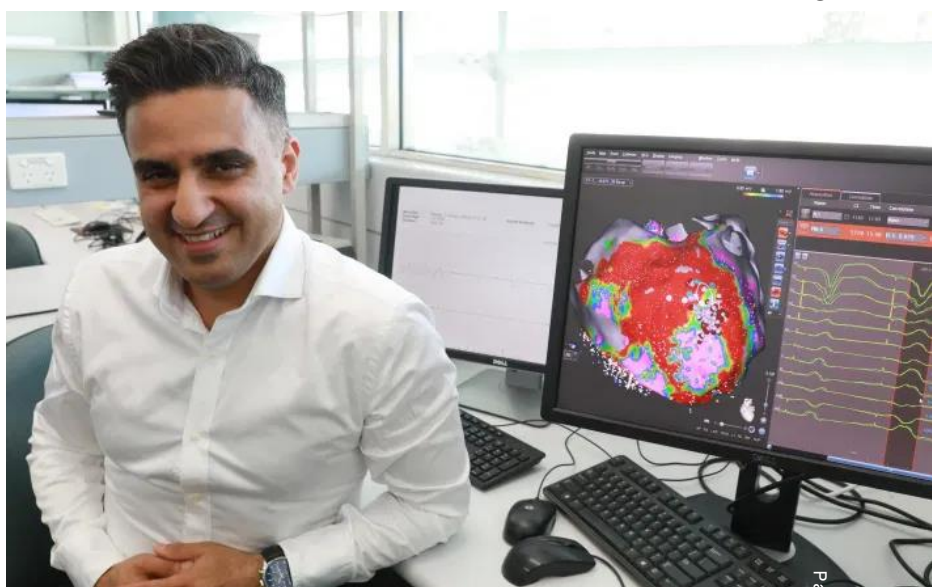


Prof. Tim Usherwood
General Practice

Principal Investigator highlights

Associate Professor **Saurabh Kumar** was awarded a prestigious NSW Health Office of Health and Medical Research grant for his clinical trial examining patients at risk of cardiac arrest or sudden cardiac death. This world-first trial will investigate if patients with fatal or near-fatal heart rhythm disturbances (called ventricular arrhythmias) are best managed with a minimally-invasive 'keyhole' procedure called an ablation, or with standard care alone.

A/Prof Kumar's team also supports the ongoing preclinical studies of A/Prof James Chong and Dr Eddy Kizana in developing novel stem cell and gene therapies for restoring heart function after a cardiac event, as well as researchers at The University of Sydney and internationally.





Dr **Aravinda Thiagalingam** and PhD candidate Daniel McIntyre are developing the 'EDUCATE-AF' program, which aims to provide atrial fibrillation patients with important information about their condition and the medication required to manage it. Patient knowledge of atrial fibrillation is historically poor, but there is not enough time in a 15-minute clinic appointment for doctors to provide care and educate patients about their condition. Thus, the EDUCATE-AF program aims to fill this crucial knowledge gap to improve healthcare engagement and medication adherence.



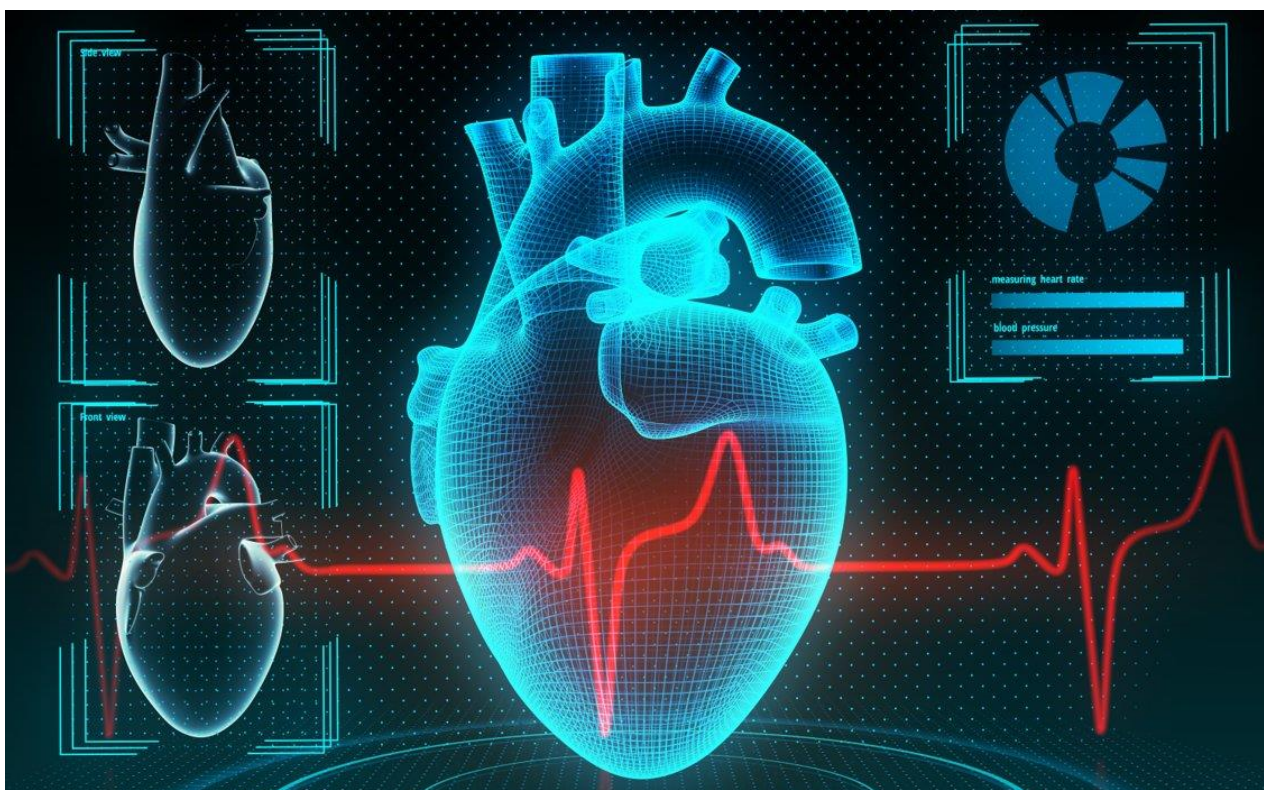
Professor **Julie Redfern** was awarded an inaugural \$5 million National Health and Medical Research Council (NHMRC) Synergy Grant for the SOLVE-CHD project (Solving the long-standing evidence-practice gap associated with cardiac rehabilitation and secondary prevention of coronary heart disease) which will reform cardiac rehabilitation and care for people with heart disease.

The goal of the project is to modernise post-discharge secondary prevention and reduce the burden of heart disease by decreasing deaths, hospitalisations and costs via a program of work that integrates data, technology, partnerships and capacity building.

This large program of work will change the delivery of post-hospital management and secondary prevention of heart disease.

“Over the next five years, our team will deliver a program of research and health care reform that will finally change the delivery of post-hospital management and secondary prevention of heart disease.”

Prof. Julie Redfern
Deputy Director, WARC
FMH Academic Leader Researcher
Development



Our Strategy

WARC's location in Westmead and western Sydney provides a unique opportunity to co-design research with multi-disciplinary health practitioners and consumers in a diverse patient population with multi-morbidities and specific socio-economic demographic risk factors.

We're building capacity in clinical and health services research.

WARC's diverse research network spans across multiple faculties and disciplines at The University of Sydney and Western Sydney Local Health District.

By forming collaborations with researchers from Australia and internationally, we aim to become a global hub for chronic disease prevention and management.

We bring together the expertise of clinicians and industry experts through the whole development process –from forming the initial concepts all the way to delivering the final product.

The strength of our clinical and industry partnerships establishes our reputation as leaders in developing digital health innovations for treating chronic health conditions.

We lead the development and evaluation of digital health interventions for chronic diseases.

We're accelerating the translation of clinical research to reduce the burden of chronic disease.

We engage with consumers, clinicians and health service staff to deliver interventions with an immediate positive impact on patients' lives.

We liaise with government and policy stakeholders from the initial stages of research development through to implementation to building accelerated pathways for research translation.

Our Research Themes

We have over 60 projects and clinical trials involving more than 10,000 patients. We collaborate with industry, government and other disciplines to design and run trials in digital health, clinical research, and health services and policy and have been nationally and internationally recognised for their innovation.

Digital Health

Our leading digital health projects include texting programs, and interventions leveraging mHealth and eHealth that build sophisticated data-analytics and customisation using machine-learning and AI. Some of our programs include:

SMART Mums 2: a digital health intervention to reduce diabetes risk for women with recent gestational diabetes. This randomised controlled trial uses an activity monitor watch and customised mobile phone text messages to promote the adoption of a healthier lifestyle. MRFF funded.

TEXT messages to improve Medication adherence & Secondary prevention (TextMedS): a randomised controlled study that investigates the effectiveness of sending automated mobile text messages to people with cardiovascular disease. The intervention aims to improve adherence to medication, lifestyle and behaviour change. NHMRC funded.

Integrated Text Messaging (ITM): This study evaluates a six-month post-discharge text messaging support program for people with chronic respiratory or cardiovascular disease as an addition to cardiac and pulmonary outpatient rehabilitation. Heart Foundation of Australia funded.

Clinical Research

These projects evaluate new treatments, new clinical pathways and new approaches aimed at improving health outcomes, health experience and reducing health costs. This includes randomised clinical trials for new approaches to ventricular arrhythmias, studies in cardiac regeneration therapy and renal denervation therapies. Some programs include:

Intensive Blood Pressure lowering for prevention of Atrial Fibrillation (AFIB): This study examines the effectiveness of intensive blood pressure lowering in patients with AFIB. The strategy involves the use of the Quadpill, an ultra-low (quarter-strength) dose blood pressure lowering combination pill. Heart Foundation of Australia funded.

WAHOO: is a randomized controlled clinical trial to determine whether the wearable AliveCor KardiaMobile monitor provides a superior clinical diagnostic yield to the Holter monitor in patients with symptomatic cardiac arrhythmia.

Health Services & Policy

Value-based care and equity is a theme that cuts across all research at WARC. Our programs aim to address gender equity in CVD and frailty and unintended impacts of COVID-19 on cardiovascular health. The diversity of western Sydney population makes it a natural testbed for our research.

Rapid Access Cardiac Clinic (RACC) Eval: This is a multicentre study to evaluate the rapid access cardiology clinic model of care. MRFF funded.

TestBeds: This aims to examine the quality and availability of clinical data in electronic databases (eMedical records, My Health Record (MHR) and other electronic sources) pre- and post-implementation of MHR in a Cardiology clinic setting. Australian Digital Health Agency funded.

Quality improvement in primary care to prevent hospitalisations and improve Effectiveness and efficiency of care for people Living with coronary heart disease (QUEL): This study focuses on quality improvement in primary care to prevent hospitalisations and improve effectiveness and efficiency of care for people living with heart disease. NHMRC and partner funded.

Project snapshot

Despite improvements in life expectancy, heart disease is still a leading killer of Australians, and diabetes is the fastest growing chronic condition in the country. Our researchers and partners are focused on studies for the prevention and treatment of chronic disease to help all Australians from western Sydney and beyond.



FirstCPR

The large majority (80%) of out-of-hospital cardiac arrests happen in our homes and on average only 1 in 10 will survive. The pathway for improving survival includes a set of sequentially resuscitative interventions, First CPR is a randomised cluster trial to evaluate a novel approach to target CPR health education in community organisations in vulnerable regions, involving diverse populations and that are not traditional users of CPR training.

This study, funded by NHMRC partnership project grant, is a collaborative effort with our partners including Surf Lifesaving NSW, Michael Hughes Foundation, Western Sydney Local Health District, Heart Foundation of Australia, Ambulance Service of New South Wales, NSW Ministry of Health, NSW Data Analytics Centre, Take Heart Australia, City of Parramatta and Heart Support Australia.

We were proud to work with our partners to celebrate CPR techniques on World Heart Day and host the NSW Out of Hospital Cardiac Arrest forum in 2019.

The *Supporting community awareness and response to Out of Hospital Cardiac Arrest (OHCA)* Stakeholder Forum, facilitated by Prof. Clara Chow and Dr Marianne Gale from the Office of the Chief Health Officer. Attendees included His Excellency General The Honourable David Hurley AC DSC, Dr Kerry Chant PSM, Chief Health Officer and Deputy Secretary, Population and Public Health, Dr Jean-Frederic Levesque, Chief Executive, Agency for Clinical Innovation, Dr Dominic Morgan ASM, Chief Executive of NSW Ambulance and Julie Hughes, Executive Director of the Michael Hughes Foundation.



“Being a PhD candidate at WARC has provided me with a supportive and stimulating learning environment and enormous opportunities to delve into all aspects of research. I never miss the weekly EMCR meetings that have been very valuable in my PhD journey.”

Sonali Munot
PhD Candidate





Quartet/Quartet USA

High blood pressure is common and a major cause of heart disease and stroke. While many people with hypertension are on some treatment, in more than half blood pressure targets are not reached and their high blood pressure is uncontrolled. In this research we investigate whether an approach that combines four types of blood pressure lowering medications at quarter doses into one pill, may be a more effective way of controlling blood pressure.

This study, which is currently a national phase III clinical trial, was described in the Lancet as an 'innovative concept that could change the paradigm of blood pressure treatment'. We will

Quartet USA collaborator Mark D. Huffman (first from left) visiting Australia, pictured with Prof. Clara Chow, Prof. Gemma Figtree and Dr Emily Atkins

deliver the first multi-centre NHMRC-sponsored randomized trial of the Quadpill in 2021, and will follow this with a NIH-sponsored sister trial (with Professor Mark Huffman at Northwestern University, United States of America). Our protocol has received international recognition and was recently published in the American Heart Journal.



"Managing Quartet has enabled me to acquire new skills by being open-minded, thinking creatively in exceptional global environments and constantly challenging myself to provide the best patient care possible. I'm grateful to have this opportunity to work with diversely talented individuals and experts in the field."

Vishal Gopal
Project Manager



TextCare®

TextCare® (Text messaging support for people with chronic disease) was designed to address the lack of available, accessible and effective support services for people living with chronic disease. Funded by the Google Impact Challenge, the TextCare® text messaging support programs are based on behaviour change theory, using computerised algorithms to create personal and relevant messages. These messages deliver education, motivation and support directly to people living with chronic disease, unlike current care models that are generally dependent on periodic face-to-face consultations.

Our TEXTME research was the proof of concept for the clinical effectiveness of personalised text-based messaging and was demonstrated through a randomised controlled trial of 710 patients with coronary heart disease published in the Journal of the American Medical Association.

We have recently collaborated with our longstanding partners **Heart Foundation of**

Australia delivering the SMS journey of their MyHeartMyLife campaign – a national hospital campaign to deliver heart health information.

We have also been delivering other programs in conjunction with Westmead Hospital for patients with CVD, diabetes, cancer and other vulnerable patients in the community including a program for COVID positive patients in western Sydney.



Government-funded [Digital Health Cooperative Research Centre](#) (DHCRC), is positive proof of how the intersection of academia, industry and the healthcare sector can result in meaningful real word outcomes for patients and healthcare professionals.



CHAT-AF

Supporting Patients with
Atrial Fibrillation

Chat-AF

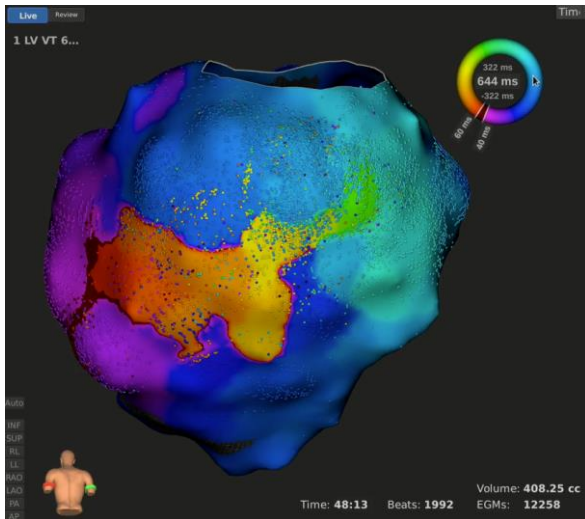
Atrial fibrillation is a heart condition that affects two to four percent of the population. Our six-month digital support program for atrial fibrillation patients brings together a number of technologies; text message, email and interactive voice response (IVR) and a personalised education website, that will help patients navigate their condition and improve their medical and lifestyle management for better outcomes.

This project, which is a partnership with US industry partner HMS and the Australian



“I have been lucky enough to bring a number of projects from inception to reality and seen the real impact these projects can have on individuals. This is only possible through our dynamic leadership team that has fostered a collaborative team environment, where every opinion is valued.”

Emma Charlston
Senior Project officer



Complex Arrhythmia

The Complex Arrhythmia program focuses on the treatment, identification and pathophysiology of sudden cardiac death and malignant ventricular arrhythmias (a type of abnormal heart rhythm). To this end, we have research projects across bench testing, pre-clinical large animal, device screening, clinical procedure research and clinical trials.

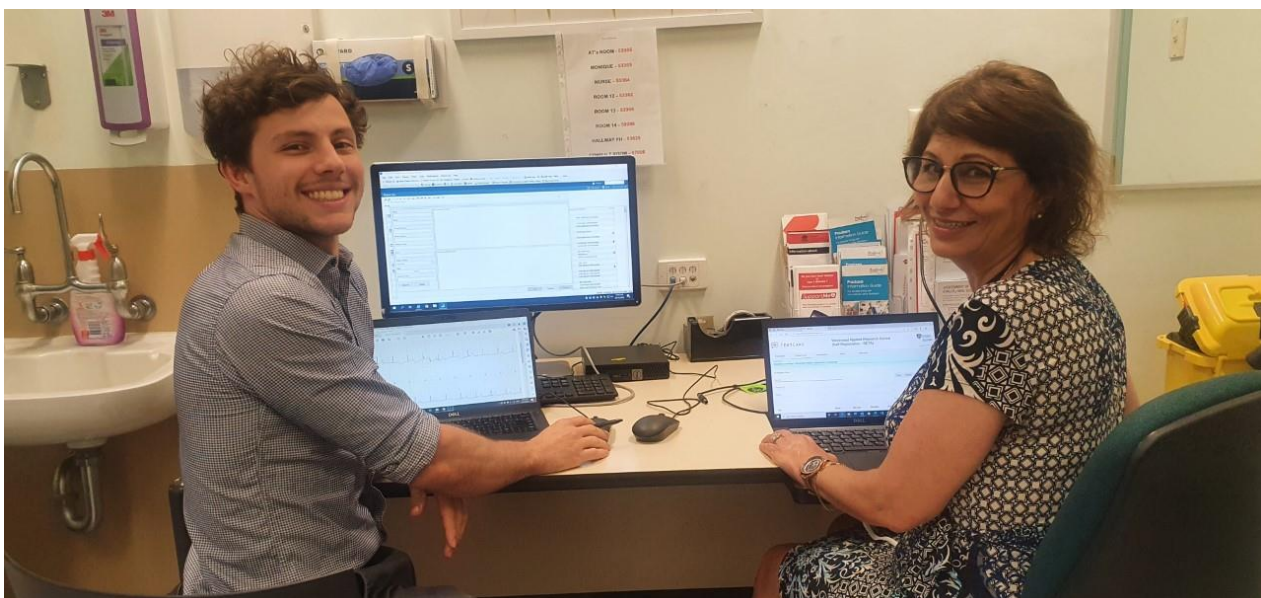
Our landmark trials, Code Storm and CAAD VT, are critical for our understanding of acute management in patients who have incessant or frequent episodes of ventricular tachycardia and whether ablation or medical therapy in structural heart disease patients with ventricular tachycardia should be our first line treatment option. These trials have ongoing recruitment and have initiated multi-centre sites to accelerate recruitment and strengthen study findings. Ongoing wearable device studies

are also comparing the accuracy of current gold standard monitoring with wearable devices and single lead ECG.

Our research findings over the last 12 months have included demonstrating the benefits of non-invasive imaging in the identification of suitable regions for ablation in novel ways with strain echocardiography in idiopathic and structural heart disease, the first reported instance of focal arrhythmias remote to underlying diseased myocardium as a reason for poor long term success in current treatments, in pre-clinical work the effects of a novel irrigation medium on the size of ablation lesions for difficult to reach regions of ventricular myocardium and highlighted improved mapping and ablation techniques for the assessment of successful lesions or when ventricular arrhythmias were difficult to induce.

We also recently completed the largest retrospective study comparing conventional mapping with remote magnetic navigation systems for ventricular arrhythmia and reported novel induction techniques with improved long-term success for recurrence of ventricular arrhythmias during ablation procedures. As a result, Initiate VT, a prospective trial comparing guidelines against our novel induction techniques has received approval and has commenced patient recruitment across the Western Sydney Local Health District.

Our hard-working research assistants Sam Turnbull and Rose White busily recruiting patients.





MICardiac

Professor Clara Chow was awarded Australia's inaugural Google.org AI Impact Challenge prize, receiving \$1 million and expert support to develop a customised digital health program powered by artificial intelligence (AI), aimed at reducing the risk of heart attack – the biggest cause of death globally. Her team have developed methods to generate the content and algorithms to produce a range of customised texting programs for patients with chronic disease.

This program involves clinical trials, data science and qualitative approaches. New trials will evaluate interventions with increased customization that use rich data sources including wearables, and machine-learning and AI approaches. We will also be building community partnerships and research collaborations to support implementing this work across other chronic health conditions.

Awards ceremony for the Google AI Impact Challenge. L-R: Prof. Clara Chow, Marija Ralic (Google), Tara Czinner, Minister for Industry, Science and Technology Karen Andrews, Viji (USyd Tech Lab), Jim Cook (USyd Tech Lab), Google CEO Mel Silva, Dr Harry Klimis, Dr Andrew Black (Westmead Living Lab), Joel Notham (Sydney Informatics Hub), Emeritus Prof. Steven Leeder.



Welcome to our new WARC Researchers in 2020

We are fortunate to have a growing number of research fellows and postdocs join our team. In particular, we extend a warm welcome back to two cardiologists who have returned to Westmead Hospital to lead very exciting and innovative research programs.

Associate Professor Sarah Zaman

A/Prof Sarah Zaman is an interventional cardiologist who has joined WARC and Westmead Hospital as an early-mid career researcher. Her research focuses on women's heart disease. In particular, she is passionate about research into reducing inequities in diagnosis and treatment of heart disease in women, such as one of the most common forms of heart disease – acute heart attacks. She also leads research into female-predominant heart disease, such as spontaneous coronary artery dissection (SCAD), a condition that affects relatively healthy young and middle-aged women and can result in a heart attack.

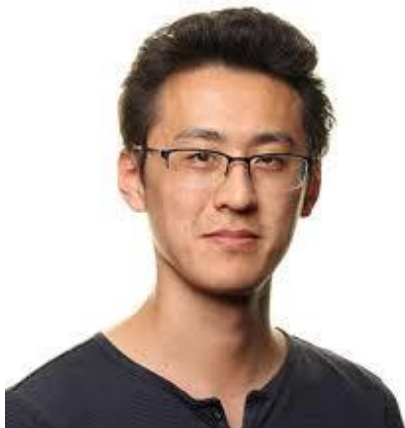
A/Prof Zaman's research at WARC will focus on developing a national cohort study to further understand this uncommon disease. She is also developing clinical trials to improve the prevention of cardiovascular disease in women, particularly Aboriginal and Torres Strait Islander women, by using a CT-based coronary calcium score. Her other research interests include secondary prevention of heart disease and prevention of sudden cardiac death.



Dr Pierre Qian

Dr Pierre Qian is a cardiac electrophysiologist who recently returned from a 2-year clinical and research Fellowship at Brigham and Women's Hospital on a Bushell Traveling Fellowship from the RACP. His work focuses on novel ablation technologies for treating ventricular tachycardia, including complex cardiac catheter ablation for ventricular tachycardia and atrial fibrillation. He is currently supported by a NSW EMCR grant and a Heart Foundation Postdoctoral fellowship to undertake research in developing new ablation technology and procedural techniques for treating hypertension and heart rhythm disorders.

Dr Qian is building a team to undertake medical device innovation and explore the cardiovascular applications of novel energy sources for minimally invasive catheter ablation and impedance-based methods to visualise heating within the body, as well the use of gamma radiation to deliver noninvasive cardiac ablation.



International Researchers and Student Training

Our International Clinician-Researcher and Student Training Program has deepened our international collaborations and publications with clinicians and students from countries all over the world, including China, Canada, Vietnam, Poland and Japan.

Dr Qingtao Meng



Dr Qingtao Meng is a cardiologist from West China Hospital of Sichuan University who joined us in 2018 to undertake clinical research training for her PhD. Her research focuses on cardiovascular disease prevention. She also spent time at The George Institute during her stay.



Visiting researchers Qingtao Meng and Yang Yu on the ferry to Taronga Zoo with Nashid Hafiz and Anna Singleton.

Dr Yang Yu



Dr Yang Yu is a specialist working in the Emergency Department of Xinhua hospital affiliated to Shanghai Jiaotong University School of Medicine. His research interests lie in the area of bedside emergency ultrasound, acute lung injury/acute kidney injury/sepsis, and neuroprotection after cardiac arrest resuscitation. Dr Yu is extremely well-travelled, having visited clinics in Israel, Italy, the US and in Tibet.

Dr Yu was also part of China's international team deployed to Italy during the COVID-19 pandemic.



Dr Yang Yu arriving in Italy as part of China's international COVID-19 relief taskforce

Dr Nurun Nahar and Hideki Nagata, PhD students from the Shiga University of Medical Science in Japan, with Prof. Clara Chow.



Dr Yasuhito Kotake

Dr Yasuhito Kotake is an electrophysiology specialist from the Kindai University School of Medicine in Japan. He received the Abbott Arrhythmia Fellowship for Young Japanese Investigator from Japanese Heart Rhythm Society and will work with Dr Saurabh Kumar to support the chronic animal infarct model project at the Westmead Hospital animal vivarium.

Dr Emily Rugel

Dr Emily Rugel received her doctorate from the University of British Columbia's School of Population and Public Health, where she developed a regional model of natural spaces and applied it to prescription and health-survey data. Her work explores health-promoting community design, with the aim of developing evidence that can be embedded in sustainability plans and in policies that advance equity.



"Working as a visiting researcher at WARC has provided me with a slew of unique, invaluable opportunities, including formally mentoring a Ph.D. student; advancing collaborations with colleagues across The University of Sydney, local research institutes, and other Australian universities; and sharing my research work at journal clubs, webinars, and festivals."

Dr Emily Rugel
Visiting Postdoctoral Researcher

Key Achievements

WARC's pursuit of innovation and excellence has led to our researchers, students and staff receiving many awards and accolades at a local, national and international level. Here are some of our key achievements.

Awards

- Dr Stephanie Partridge was awarded a Heart Foundation NSW CVRN 2020 Professional Development Award
- Dr Stephanie Partridge received 2nd place at the Lifespan Research Collaboration Awards
- Anna Singleton was awarded a CVI Implementation and Policy Catalyst Award
- Anna Singleton won the People's Choice award for the UA Pitch It Clever video for EMPOWER-SMS
- Caroline Wu was one of sixty University of Sydney staff to be awarded a Vice Chancellor's Award for Excellence in 2020
- Anna Singleton won Best Presentation and People's Choice Award at the 2020 Postgraduate and ECR Cancer Research Symposium Series
- Anna Singleton also won People's Choice award at the recent 6th Annual CPC EMCR Symposium
- Sisi Jia won the Best Oral Presentation (Professional Staff) at the 6th Annual CPC EMCR Symposium
- Sonali Munot was a finalist in the Prevention Prize session at the Cardiac Society of Australia and New Zealand Annual Scientific Meeting 2020
- Dr Karice Hyun was a finalist in the Allied Health and Technology Prize session at the Cardiac Society of Australia and New Zealand Annual Scientific Meeting 2020
- Daniel McIntyre was awarded the prize for Best Poster Presentation (multidisciplinary) at the Cardiac Society of Australia and New Zealand Annual Scientific Meeting 2020
- Dr Stephanie Partridge won a CVI Engineering Catalyst Award
- Team Aurora, led by Dr Pierre Qian, won the IDE Group Building Better Futures for Health Challenge 2020 with their Aurora Catheter



PhD student Anna Singleton received the People's Choice award for her video on the EMPOWER-SMS program.

Grants

- Prof Clara Chow and Dr Karice Hyun were awarded NHMRC Investigator Grants
- A/Prof Saurabh Kumar, Dr Stephanie Partridge, Dr Karice Hyun, and Dr Pierre Qian were awarded NSW Health EMCR Grants
- Dr Pierre Qian was awarded a Postdoctoral Fellowship and Vanguard Grant from the Heart Foundation of Australia
- Dr Stephanie Partridge, Sisi Jia, Rebecca Raeside and Prof. Julie Redfern were awarded a Chancellor's Committee Grant
- Dr Stephanie Partridge and Dr Alice Gibson (supported by Prof. Julie Redfern) were awarded a Sydney Informatics Hub ECR Project
- Dr Stephanie Partridge was awarded a CPC EMCR Seed Funding Grant
- A/Prof Sarah Zaman was awarded a National Heart Foundation Future Leader Fellowship (2020–23) targeting Women's Heart Disease and a \$1 million NSW Health Cardiovascular Elite Research Grant (2020–22) to relocate from Victoria to NSW to build and lead a Women's Heart Disease Research Program at the University of Sydney
- A/Prof Sarah Zaman was awarded a CSANZ-Bayer Young Investigator Research Grant
- Dr Genevieve Coorey was awarded a CVI Ignite Award Seed grant



Prof. Clara Chow was a finalist at the 2020 NSW Premier's Woman of the Year awards

Honours

- Prof. Clara Chow was elected as the first female President Cardiac Society of Australia and New Zealand
- Prof. Julie Redfern was selected by NSW Minister for Health to be a member of the NSW Physiotherapy Council
- Anna Singleton was selected for the ACvA Champions Program
- Prof. Clara Chow was a finalist for the NSW Premier's Woman of the Year in 2020
- Dr Karice Hyun was selected to speak at TEDxMacquarie University
- A/Prof Sarah Zaman led Heart, Lung and Circulation's inaugural Women's Heart Health Special Edition that was published in Dec 2020
- A/Prof Sarah Zaman was recognised internationally as an emerging leader in cardiology– selected as 1 of 12 early career cardiologists globally to the International Emerging Leader Fellowship (United States, 2020)



Dr Karice Hyun presented her talk 'Heart disease is not just a men's disease' at TEDxMacquarie University (1600 views).

Key publications

- Khan E, Brieger D, Amerena J, Atherton JJ, Chew DP, Farshid A, Ilton M, Juergens CP, Kangaharan N, Rajaratnam R, Sweeny A, Walters DL, Chow CK. Differences in management and outcomes for men and women with ST-elevation myocardial infarction. *Medical Journal of Australia* 2018; 209(3):118-123.
- Chow CK, et al. Availability and affordability of essential medicines for diabetes across high-income, middle-income, and low-income countries: a prospective epidemiological study. *Lancet Diabetes Endocrinol* 2018; 6(10):798-808.
- Yu Y, Meng Q, Munot S, Nguyen T, Redfern J, Chow CK. Assessment of community interventions for bystander cardiopulmonary resuscitation in out-of-hospital cardiac arrest: A systematic review and meta-analysis. *JAMA Network Open* 2020; 3(7):e209256.
- Cheung NW, Crampton M, Nesire V, Hng TM, Chow CK. Model for integrated care for chronic disease in the Australian context: Western Sydney Integrated Care Program. *Australian Health Review* 2019; 43(5):565-571.



Prof. Wah Cheung, WARC Principal Investigator leads Westmead Hospital's Department of Diabetes and Endocrinology, recognised as one of the best specialised centres in the world as reported by US publication Newsweek

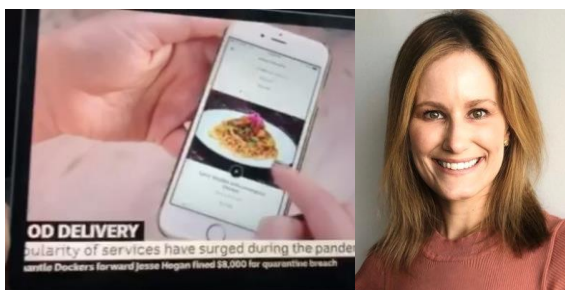
- McIntyre D, Chow CK. Waiting Time as an Indicator for Health Services Under Strain: A Narrative Review. *Inquiry* 2020; 57:1-15.
- Santo K, Singleton A, Chow CK, Redfern J. Evaluating Reach, Acceptability, Utility, and Engagement with An App-Based Intervention to Improve Medication Adherence in Patients with Coronary Heart Disease in the MedApp-CHD Study: A Mixed-Methods Evaluation. *Med Sci (Basel)* 2019; 7(6):68.



“WARC is a supportive and inclusive environment to pursue my PhD. Through WARC, I have built my network of research collaborators.”

Dr Kam Wong
PhD Candidate

- Wong KC, Klimis H, Lowres N, von Huben A, Marschner S, Chow CK. Diagnostic accuracy of handheld electrocardiogram devices in detecting atrial fibrillation in adults in community versus hospital settings: a systematic review and meta-analysis. *Heart* 2020; 106:1211-1217.
- Santo K, Singleton A, Chow CK, Redfern J. Evaluating Reach, Acceptability, Utility, and Engagement with An App-Based Intervention to Improve Medication Adherence in Patients with Coronary Heart Disease in the MedApp-CHD Study: A Mixed-Methods Evaluation. *Med Sci (Basel)* 2019; 7(6):68.
- Partridge SR, Gibson AA, Roy R, Malloy JA, Raeside R, Jia SS, Singleton AC, Mandoh M, Todd AR, Wang T, Halim NK, Hyun K, Redfern J. Junk Food on Demand: A Cross-Sectional Analysis of the Nutritional Quality of Popular Online Food Delivery Outlets in Australia and New Zealand. *Nutrients* 2020; 12(10):3107.



Dr Stephanie Partridge's study on food delivery services was recently featured on ABC News.



“WARC is a wonderful group of people with similar interests and goals. Everyone I work with is passionate about heart disease prevention and I find that a strong motivator when I come into the ‘lab’ every day.”

Dr Harry Klimis
PhD Candidate

- Klimis H, von Huben A, Turnbull S, Han J, Chen H, Nalliah CJ, Thiagalingam A, Chow CK, Kumar S. Rapid Access Arrhythmia Clinics (RAACs) Versus Usual Care: Improving Efficiency and Safety of Arrhythmia Management. *Heart, Lung and Circulation* 2020; in press
- Redfern J, Figtree G, Chow C, Jennings G, Briffa T, Gallagher R, Foreman R; Roundtable Attendees. Cardiac Rehabilitation and Secondary Prevention Roundtable: Australian Implementation and Research Priorities. *Heart Lung Circ.* 2020; 29(3):319-323.
- Redfern J, Coorey G, Mulley J, Scaria A, Neubeck L, Hafiz N, Pitt C, Weir K, Forbes J, Parker S, Bampi F, Coenen A, Enright G, Wong A, Nguyen T, Harris M, Zwar N, Chow CK, Rodgers A, Heeley E, Panaretto K, Lau A, Hayman N, Usherwood T, Peiris D. A digital health intervention for cardiovascular disease management in primary care (CONNECT) randomized controlled trial. *NPJ Digit Med.* 2020; 10(3):117.
- Hyun K, Negrone A, Redfern J, Atkins E, Chow C, Kilian J, Rajaratnam R, Brieger D. Gender Difference in Secondary Prevention of Cardiovascular Disease and Outcomes Following the Survival of Acute Coronary Syndrome. *Heart, Lung and Circulation.* 2021; 30(1):121-127.
- Chow CK, Nguyen TN, Marschner S, on behalf of the PURE Study, et al. Availability and affordability of medicines and cardiovascular outcomes in 21 high-income, middle-income and low-income countries. *BMJ Global Health* 2020; 5:e002640.

WARC: Where Astute Researchers Create!

The best workplace is one where you can work with great people, accomplish great things, and have fun while you're doing it – that's exactly what happens here at WARC!





Meet the WARC team!

Research Fellows



A/Prof Sarah Zaman
Research Fellow



Dr Jason Chiang
Research Fellow



Dr Genevieve Coorey
Research Fellow



Dr Karice Hyun
Research Fellow



Dr Liliana Laranjo
Research Fellow



Dr Tu Nguyen
Research Fellow



Dr Stephanie Partridge
Research Fellow



Dr Pierre Qian
Research Fellow

HDR Students



Rebecca Chen
PhD student



Gemma Enright
PhD student



Dr Harry Klimis
PhD student



Mariam Mandoh
PhD student



Daniel McIntyre
PhD student



Sonali Munot
Senior Project Officer/
PhD student



Dr Anna Ne
PhD student



Anna Singleton
Research Associate/
PhD student



Ritu Trivedi
PhD student



Dr Kam Wong
PhD student



Dr Richard Bennett
MPhil student



Timothy Campbell
Project Manager/
MPhil student



Dr Siddharth Garde
MPhil student



Nashid Hafiz
Research Officer/
MPhil student



Timmy Pham
MPhil student

Research & Professional Staff



Oreoluwa Adeyinka
Research Assistant



Dr Nicola Barrie
Clinical Trial Coordinator



Leticia Bezerra-Giordan
Research Admin Officer



Emma Charlston
Senior Project Officer



Amie Cho
Clinical Trial Coordinator



Vishal Gopal
Clinical Trial Project Manager



Louise Hay
Clinical Trial Coordinator



Anu Indrawansa
Research Assistant



Jocelyn Jackson
Research Assistant



Si Si Jia
Research Assistant



Ritu Kunwar
Research Assistant



Julia Ning
Senior Project Officer



Sweta Perera
Research Assistant



Rebecca Raeside
Research Officer



Alison Robinson
Research Assistant



Samual Turnbull
Research Assistant



Dr Tony Qiang Tu
Research Admin Officer



Amy von Huben
Statistical Programmer



Rose White
Research Assistant



Dr Stephanie Yee
Scientific Comms Assistant