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Introduction

The Australian Resuscitation Outcomes Consortium (Aus-ROC) has been established to promote and conduct multi-centre clinical research in the area of pre-hospital cardiopulmonary arrest.

The Consortium is modelled on the highly successful North American (United States and Canada) Resuscitation Outcomes Consortium (ROC).

The consortium has identified a number of strategies to deliver its program of research:

1. To undertake large multi-centre clinical trials of innovative interventions to improve OHCA patient outcomes
2. To establish an Australia-wide OHCA ‘epistry’ (epidemiologic registry) to monitor and report on the population-based effects of changes in pre-hospital resuscitation policy and practice.
3. To examine system-based strategies to improve the efficiency and effectiveness of pre-hospital emergency care for OHCA in urban and rural environments.
4. To build capacity in pre-hospital emergency care research across Australia through graduate research and post-doctoral training.

The ‘Chain of Survival’ concept depicted below will provide the framework for the Aus-ROC programme of research; to build the evidence base across the chain of survival trajectory from: patient collapse; recognition and call for help; time-critical emergency dispatch; immediate life-support strategies and application of therapeutic interventions; patient transport and post-resuscitation care.

The Aus-ROC CRE initially brought together three Australian Universities (Monash University; Flinders University) and three Australian state ambulance services (Ambulance Victoria; SA Ambulance Service; St John Ambulance Service Western Australia) together with international collaborators from the UK and USA. As from July 2013, the Aus-ROC (WA) site will based at Curtin University, instead of UWA.
Director’s Report

The Aus-ROC Centre for Research Excellence was established with the goal to improve outcomes in patients with out-of-hospital cardiopulmonary arrest, through collaboration between academic researchers, clinicians, ambulance services and community/patient representatives. We aim to build capacity in resuscitation research to enable both the conduct of high quality patient-focused studies and promote the translation of research findings into practice.

The NHMRC 5-year funding of the CRE, administratively based at Monash University (Melbourne), commenced in January 2012. Based on the recommendation from the NHMRC peer-review panel for one of the Chief Investigators to be appointed as the Director of the CRE, Professor Judith Finn (based in Perth) was appointed in Feb 2012. It was the intention that Professor Finn spend one week per month in Melbourne. With Professor Peter Cameron (CIA) temporarily relocating to Qatar in mid-2012, the role of Director has also involved more ‘operational’ academic responsibilities at Monash University. The role may evolve to a more strategic focus when Professor Cameron returns to Australia.

The last 18 months has been a time of establishment of the Aus-ROC CRE structures, policies and personnel. We established a web presence early (www.ausroc.org.au) to promote the activities of the Aus-ROC CRE and the website is now undergoing a professionally ‘make-over’. Whilst still quite ‘new’, there is a growing national and international awareness of Aus-ROC – not the least of which is due to the high profile of the Aus-ROC Investigators in the world of resuscitation science. As listed in the ‘Presentations’ sector of this report, Prof Finn has been invited to speak on behalf of the Aus-ROC Investigators at a number of Australian and overseas meetings.

The NHMRC Aus-ROC funding is predominantly focussed on developing capacity in resuscitation research through funding early career researchers and PhD scholarships. To date the four post-doctoral research fellow positions have been filled and two of the five PhD scholarships awarded. Modelled (with approval) on the Australian New Zealand Intensive Care Society Clinical Trials Group (ANZICS CTG) documents we have our governance structures and policies established and freely available from our website. The over-arching Aus-ROC Steering Committee (Chaired by Prof Peter Cameron) is responsible for determining the strategic direction of the Aus-ROC CRE and ratifying governance processes. The Aus-ROC Management Committee (Chaired by Prof Judith Finn) is responsible for the operational decision-making and day-to-day management of the CRE.

For some years NHMRC has espoused the value of consumer and community consultation in all health and medical research to shape decisions about research priorities, policies and practices. Aus-ROC is fortunate to have three community representatives on the Steering Committee Ms Louise Owen runs a successful first-aid and basic life support training company in Northern Rivers NSW (and is a long-term survivor of OHCA); Mr Jeff Waters is a successful Journalist living in Melbourne (and a more recent survivor of OHCA); and Mr Brian Stafford is an experienced health consumer representative with the Health Consumer Council (WA). Each of the consumer representatives make an important contribution to bringing the ‘patient’ perspective to Aus-ROC’s activities.
Director’s Report

Our programme of research began with the ‘RINSE’ study is a NHMRC funded multi-centre RCT of paramedic cooling during CPR using a Rapid Infusion of Cold Normal Saline being conducted in Melbourne, Adelaide and Perth, under the leadership of Prof Steve Bernard. As of June 2013, recruitment is approaching the halfway mark, with 12 month quality of life follow-up of OHCA survivors having commenced in Melbourne. Further details about the RINSE study and other studies that have been conducted or are being planned are described elsewhere within this report.

The other major strategic research initiative for Aus-ROC is the development of the Aus-ROC Epistry – an epidemiologic registry of all OHCA's attended by ambulance paramedics. As described in this report it is our goal that by 2014 the Epistry will receive OHCA data from all Australian and New Zealand ambulance services. An Epistry Management Committee (Chaired by Prof Ian Jacobs), with representation from all ambulance services contributing data, will oversee the activities of the Epistry and ensure compliance with the Aus-ROC Epistry governance document (available from the Aus-ROC website).

In summary, due to the hard work and collaborative spirit of the Aus-ROC Steering Committee members the last 18 months have seen the establishment of the Australian Resuscitation Outcomes Consortium (Aus-ROC). The next 1-2 years will require us to build our programme of research and expand our partnerships nationally and internationally. We will also need to be cognizant of the longer-term issue of the sustainability of Aus-ROC – which will invariably require additional funding sources beyond the 5-year NHMRC CRE funding. I would like to thank all of the members of the various Aus-ROC committees who have actively participated (for many, on a monthly basis) to work towards our common goal of saving lives and improving outcomes for survivors of out-of-hospital cardiac arrest.

Professor Judith Finn
Aus-ROC Director
13 June 2013
Personnel

Chief Investigators

Professor Peter Cameron MBBS, MD, FACEM

Professor Cameron is currently on sabbatical and is Chairing the transformation of Emergency and Trauma Care in Qatar. He remains Head of the Victorian State Trauma Registry, Head of the Critical Care Research Division in the Department of Epidemiology and Preventive Medicine at Monash University, Academic Director Emergency Medicine Alfred Hospital, Co-Director National Trauma Research Institute and Director of the Centre for Research Excellence in Patient Safety, President International Federation of Emergency Medicine. His past appointments include Professor/Director of Emergency Medicine Geelong Hospital, Royal Melbourne Hospital and Prince of Wales Hospital (Hong Kong).

Professor Cameron has attracted over 20 million dollars in competitive grants and is a lead investigator on the cardiac arrest, haemostasis, orthopaedic and trauma registries. He is a principal investigator on a number of large multicentre trials, including The Australasian Resuscitation in Sepsis Evaluation – Randomised Controlled Trial (ARISE), A randomised controlled trial of prophylactic hypothermia in severe traumatic brain Injury (The POLAR RCT) and The RINSE Trial: The Rapid Infusion of Cold Normal Saline by paramedics during CPR. In the last 5 years he has published over 150 manuscripts in Medline indexed journals and more than 350 publications as a career total.

Professor Cameron is a regular speaker at National and International meetings on emergency medicine, resuscitation and trauma topics. He has recently presented as a keynote speaker at international conferences in the UK, USA, Vietnam, Myanmar, Lebanon, Oman, Ireland and Canada.

Professor Cameron is on the Editorial Boards of four journals, Emergency Medicine, Injury, The Polish Journal of Emergency Medicine and Hong Kong Journal of Medicine. He also reviews articles for many other journals.

Professor Cameron has been awarded an Honorary Fellowship of the International Federation for Emergency Medicine, American College of Emergency Physicians (ACEP), the UK College for Emergency Medicine and the Argentine Society. Awarded best paper at the ACEP scientific meeting 2005.
Professor Ian Jacobs BAppSc (WAIT), DipEd (Murd.), PhD (W.Aust.), RN, FCNA, FERC, FAHA, FANZCP

Professor Jacobs is Professor of Resuscitation and Pre-hospital Care in the Faculty of Health Sciences at Curtin University and Clinical Services Director for the Ambulance Service in Western Australia. He is a Clinical Epidemiologist with a clinical background as both a Paramedic and Registered Nurse (Emergency). He is currently National Chairman and Western Australian Chairman of the Australian Resuscitation Council in addition to being Co-Chair for the International Liaison Committee on Resuscitation (ILCOR).

In 2004 Professor Jacobs lead an international group of resuscitation experts in further refining and simplifying the Utstein template and definitions used for reporting outcomes following both in-hospital and out of hospital cardiac arrest. These outputs were published in the journal Circulation and remain in current use today. In 2005 he was part of the international expert panel that developed the Consensus on Resuscitation Science and Treatment Recommendations. In 2010 he was one of three international evidence evaluation experts for ILCORs resuscitation science and guideline review process, lead author for the defibrillation section and co-authored six other sections. Professor Jacobs remains part of the international steering group currently planning the 2015 international resuscitation science review. Professor Jacobs authored the Basic and Advanced Life Support chapters of the recently published Coronary Care Manual (2nd edition). He was elected Foundation Fellow in 2010 and Honorary Life member in 2011 of the European Resuscitation Council. In 2012 he was elected Fellow of the American Heart Foundation.

Professor Jacobs has obtained over $4.0 million dollars in research funds from numerous sources, including national competitive grants (NHMRC, NHF) and has published over 128 peered reviewed articles or reports. Dr Jacobs has also been conference convener for a number of national and international conferences and has presented at over 70 conferences, 54 as either keynote or invited speaker. Professor Jacobs has supervised 9 Masters by research and 16 PhDs. He is also a member of the Medical Advisory Committee for the National Heart Foundation in Western Australia and Chair of the Medical Policy Committee – St John Ambulance and a member of the Principal Incident Review Committee - Western Australian Department of Health.
Personnel

Professor Stephen Bernard MBBS, MD, FACEM, FCICM

Prof Bernard (MBBS, MD) is a Senior Intensive Care Physician at the Alfred Hospital, Director of Intensive Care at Knox Private Hospital, and Medical Advisor to Ambulance Victoria. His MD thesis (2003) was on therapeutic hypothermia in the treatment of patients with severe neurologic injury. He has over 20 years of research experience in the design and conduct of pre-hospital randomised clinical trials. His research interests are in the areas of therapeutic hypothermia in patients with neurological injury after cardiac arrest and interventions after severe traumatic brain injury.

Prof Bernard has conducted large, prospective, randomised trials on the treatment of patients with anoxic brain injury after out-of-hospital cardiac arrest with therapeutic hypothermia. The first published in the New England Journal of Medicine was instrumental in the development of the current international recommendation that therapeutic hypothermia should be used in the treatment of patients with neurological injury after out-of-hospital cardiac arrest. Other trials published in 2010 in Circulation and 2012 in Critical care Medicine examined the timing of therapeutic hypothermia after cardiac arrest. Prof Bernard is currently leading a further randomised trial that examines the role of therapeutic hypothermia during cardiac arrest.

Prof Bernard has published over 70 peer review papers and written 13 book chapters, mainly relating to treatment of neurological injury. He has been invited to present at many international critical care meetings in the last 5 years, including the Society of Critical Care Medicine (USA) 2005, 2007, 2008; ANZCA 2005, 2013, the 1st International Symposium on Preserving the Brain in Neurological Emergencies (Tokyo 2006) and the 1st Therapeutic Temperature Management Symposium (Rome, 2007).

In 2005 he won the prestigious Asmund S. Laerdal Prize for Resuscitation Research awarded by the Society of Critical Care Medicine for excellence in research into cardiac arrest. Prof Bernard was co-chair of the organising committee of the Society of Critical Care Medicine Annual Scientific Meeting held in Honolulu in February 2008 and received a Presidential Citation award 2009 from the Society of Critical Care Medicine. Prof Bernard also has extensive research experience in clinical trials of interventions in patients with severe traumatic brain injury, including a trial of hypertonic saline (JAMA 2004), paramedic rapid sequence intubation (Annals of Surgery 2010) and is currently CI-B in a trial of therapeutic hypothermia after severe traumatic brain injury and CI-C in a trial of the use of tranexamic acid in trauma.
Personnel

Professor Judith Finn PhD, MEdStud, GradDipPH, BSc, DipAppSc(Nsg) DipAppSc(Nsg) RN RM, ICCert, FCNA, FAHA

Prof Judith Finn is currently employed in the Faculty of Health Sciences at Curtin University (Perth) as a lead researcher within the Prehospital, Resuscitation and Emergency Care Research Unit (PRECRU) and Professorial Research Fellow with St John Ambulance Western Australia. She also holds a seconded part-time appointment in the School of Public Health and Preventive Medicine at Monash University (Melbourne) as Professor and Director of the Australian Resuscitation Outcomes Consortium (Aus-ROC) – a NHMRC Centre for Research Excellence.

Judith has successfully brought together her clinical experience as a critical care registered nurse and research expertise to apply a population-based focus to clinical research questions, in particular drawing on the unique research potential of the WA linked health data. Her doctoral research was the first population-based study to make use of the St John Ambulance (WA) clinical data, linked to the WA hospital morbidity and death data. The findings from this research led to review and revision of cardiac arrest resuscitation policy and practice within the St John Ambulance (WA) service. Prof Finn’s internationally recognised expertise in resuscitation research and practice is reflected in her prestigious appointment as Co-Chair of the International Liaison Committee on Resuscitation (ILCOR) Education, Implementation and Teams (EIT) Task Force, one of six task forces that coordinate the international review of research science – and development of consensus statements and treatment recommendations that underpin resuscitation guidelines worldwide.

In the decade since her PhD completion, Judith has been successful in attracting over $4 million in competitive national (and international) research funds (NH&MRC, NHFA, Laerdal Foundation, BUPA Foundation). Her competitively funded research includes: randomised controlled clinical trials (e.g. the efficacy of adrenaline in cardiac arrest), longitudinal studies utilising linkage to statewide data (e.g. prognostic determinants of cardiac arrest and population monitoring of coronary heart disease), national surveys (e.g. resuscitation policy & practice in Australian Hospitals) & clinical audits (e.g. prevalence of venous thromboembolic prophylaxis in WA). Professor Finn’s current research focus is prehospital clinical practice and models of care; and strategies to improve outcomes for cardiac arrest patients.
Associate Professor Karen Smith PhD

Associate Professor Karen Smith is the Manager of Research and Evaluation at Ambulance Victoria where she has built up an active research programme, which covers all aspects of pre-hospital care. Karen is also an adjunct Associate Professor at the University of Western Australia (Emergency Medicine) and an adjunct Senior Research Fellow with the Department of Epidemiology and Preventive Medicine, Monash University. Her Research and Evaluation Department at Ambulance Victoria was awarded the AV Inaugural CEO Award for Leadership Excellence in 2012.

Karen co-founded and is the Principle Investigator on the Victorian Ambulance Cardiac Arrest Registry (VACAR) which contains information dating back to 1999, for all patients in Victoria, who suffer cardiac arrest and receive ambulance care (n>63,000 patients). Karen also co-founded the Victorian State Trauma Registry (VSTR) at Monash University and is a current member of the VSTR Steering Committee. A/Prof Smith is a chief investigator on key pre-hospital clinical trials such as the RINSE trial (induced hypothermia during resuscitation of cardiac arrest patients) and the AVOID trial (air versus oxygen in myocardial infarct patients). She is also actively involved in health services research, quality assurance research and the development of pre-hospital clinical indicators. Karen is co-author for one book chapter and over 50 peer-review publications in national and international journals. Over the past ten years, she has been involved in winning competitive grants and tenders totalling over $6.5 million. A/Prof Smith is also actively involved in student education and is currently co-supervising multiple post graduate students (PhD, masters and honours) enrolled across numerous universities.
Clinical Professor Peter Thompson MBBS, MBA

Professor Peter Thompson is Consultant Cardiologist and Director of Research at Sir Charles Gairdner Hospital, Perth, Clinical Professor of Medicine and Population Health, University of Western Australia, Deputy Director of the West Australian Institute of Medical Research and Deputy Director of the West Australian Heart Research Institute. He has published extensively in peer-reviewed journals. Professor Thompson is skilled in project management and team management, assisted by his completion of MBA qualifications in 2000. In addition to an active involvement in clinical cardiovascular research, he maintains a private cardiology practice with daily involvement in the management of patients with acute coronary syndromes. He is the editor of the Coronary Care Manual, which in its 1st edition became a standard textbook of Coronary Care (Elsevier) and has recently been published in 2nd Edition (Elsevier Thompson PL ed 2010, 94 chapters, 35 authored by Thompson).

From 2005 to 2009, he was an NHMRC Practitioner Fellow, and is currently a Chief Investigator on NHMRC grants for follow-up of Aboriginal cardiovascular events, identification of the prevalence of atherosclerotic disease in Western Australia, the 16 year follow-up of the predictive value of biomarkers in patients in the LIPID trial and most recently the use of genomic markers for predicting risk. He has actively participated in the design, conduct and analysis of clinical trials for 25 years and has extensive experience on the management committees of significant clinical trials. He leads a busy Clinical trials Group in the Western Australian Heart Research Institute, currently responsible as Principal Investigator for 8 trials.

His publications on genomic aspects of atherosclerosis have been widely cited (eg Circulation. 1999;99:2383-2388, 172 publications) and he is currently the Chief Investigator (CIA) on a NHMRC funded genome wide study of the LIPID cohort. He has extensive experience with the design and management of large community studies, and has collaborated with the cardiovascular epidemiology group in the UWA School of Population Health over 25 years in monitoring trends in CHD, treatment and procedures using the WA linked data bases. He was joint co-ordinator of the Perth MONICA Centre and continues the follow up of the large cohort from the original study which has recently reported its long term follow-up, showing benefit of evidence based medical treatments (BMJ. 2009 Jan 26;338:b36). He has had extensive involvement over 30 years in the National Heart Foundation, and his is research has been the basis for national education campaigns on the need for early action on heart attack.
Professor Andrew Tonkin MBBS, MD, MRACP, FRACP

Professor Tonkin’s major research achievements include seminal large-scale clinical trials including the LIPID study, one of the largest clinical trials undertaken in Australia involving over 9000 CHD patients from 87 hospitals in Australia and New Zealand; The Home Automatic defibrillator Trial (HAT), funded by the US NIH and involving 7000 survivors of acute myocardial infarction (member of Steering Committee, and Australian co-ordinator); and the AsPirin in Reducing Events in the Elderly (ASPREE) study also funded by the US NIH in addition to the NHMRC, which will involve 19,000 subjects aged 70 years and over. Both the LIPID study and HAT were published in the New England Journal of Medicine. Prof Tonkin has also been senior investigator on an ARC grant which has addressed application of the techniques of spatial geography (GIS) to accessibility of relevant services throughout Australia after the onset of an acute cardiac event in the community.

Prof Tonkin's research has had a significant impact on healthcare practice and policy. The major LIPID publication in the New England Journal of Medicine has over 4000 citations and had a major impact on eligibility for subsidy of statins by the Australian PBS and on Australian and international guidelines for CVD prevention. He was the inaugural chairman of the National Cardiovascular Health Strategies Group and since 1996 he has been chair of the Steering Committee for the National System for Monitoring Cardiovascular Diseases, based at the Australian Institute of Health and Welfare. He has also had major influence on community awareness of cardiovascular health through his role as Director of Health, Medical and Scientific Affairs, National Heart Foundation of Australia from 1997-2006. Prof Tonkin has twice been awarded the highest research award of the Cardiac Society of Australia and New Zealand, the RT Hall Prize, and was one of five population health researchers featured in the 2009 NHMRC publication 'Australian Research that’s Changing the World'. He has supervised to completion a total of 13 PhD and MD students. In 2011, Prof Tonkin was awarded an Order of Australia Medal for his contribution to medical research in the fields of epidemiology and preventative medicine.

He has been invited to deliver presentations to major international meetings in most of the last 25 years, including foremost cardiology meetings such as the American Heart Association, American College of Cardiology, European Society of Cardiology and World Congress of Cardiology. In addition to other editorial board appointments, he is the International Associate Editor for Circulation for Australia and New Zealand. He has on four occasions been an elected councillor of the Cardiac Society of Australia and New Zealand. He has also been a member of the Executive Board of the World Heart Federation. Prof Tonkin’s productivity has continued throughout his medical career and his roles as Director of Cardiology at Flinders Medical Centre, Adelaide (1978-1988) and the Austin and Repatriation Medical Centre.
Personnel

Melbourne (1988-1997) and with the National Heart Foundation (1997-2006), for which he was twice acting Chief Executive Officer.
Personnel

Associate Investigators

Professor Hugh Grantham
ASM, MBBS, FRACGP
Professor of Paramedics, Flinders University
Senior Medical Practitioner, South Australian Ambulance Service

Associate Professor Tony Walker, ASM
BParamedStud, GradCertAppMgt, GradDipEmergHth(MICA), MEd, FPA AFAIM
General Manager Regional Services, Ambulance Victoria
Adjunct Associate Professor, College of Health and Biomedicine, Victoria University

Associate Professor Peter Morley
MBBS FRACP FANZCA FCICM FERC
Senior Specialist Intensive Care, Director of Medical Education, Royal Melbourne Hospital
Director of Medical Education, RMH Clinical School, The University of Melbourne
Personnel

Assistant Professor Teresa Williams
BN MHSc, PhD
Research Assistant Professor/NHMRC Postdoctoral Clinical Research Fellow
University of Western Australia

Professor Andrew Forbes
BSc(Hons), MSc, PhD
Head Biostatistics Unit
School of Public Health and Preventive Medicine, Monash University

Winthrop Professor Antonio (Tony) Celenza
MBBS, MClinEd, FACEM, FCEM
Head, Discipline of Emergency Medicine, University of Western Australia
Director, MBBS/MD Course, University of Western Australia
Specialist Emergency Physician, Sir Charles Gairdner Hospital


**Personnel**

*Professor Gavin Perkins*

**MB ChB, MMEd, MD, FRCP, FFICM, FERC**

Clinical Professor in Critical Care Medicine Warwick Clinical Trials Unit  
Honorary Consultant, Physician at the Heart of England NHS Foundation Trust  
Co-Director of Research Intensive Care Society  
Priority group lead for critical care West Midlands South CLRN  
Chairman Resuscitation Council (UK) ALS Subcommittee  
Co-Chair BLS / AED Task Force European Resuscitation Council and  
International Liaison Committee for Resuscitation

*Professor Graham Nichol*

**MD, MPH, FRCP(C), FACP, FHRS, FERC**

Professor of Medicine  
Medic One Foundation Endowed Chair in Pre-hospital Emergency Care  
Director, University of Washington-Harborview Center for Pre-hospital Emergency Care  
Medical Director and Co-Principal Investigator, Resuscitation Outcomes Consortium Clinical Trial Center, University of Washington, Seattle, WA
Personnel

Research Fellows

**Dr Janet Bray, PhD, GDip Sci(AppStats), GradCert (ClinTrials), PGDip AdvNurs(Critical Care), GDip AppSci(Nurs)**

Dr Janet Bray is a Research Fellow with the Australian Resuscitation Outcomes Consortium (Aus-ROC) within the Department of Epidemiology & Preventive Medicine (Critical Care Division). Her background in cardiac and intensive care nursing has driven her research career to improve outcomes for critically ill cardiovascular patients - particularly in the hyper-acute phase. Areas of published scholarship include: Epidemiological and interventional studies in out-of-hospital cardiac arrest, stroke awareness, response to acute stroke symptoms, and the pre-hospital and emergency care of stroke patients.

In the past five years, Dr Bray has been the recipient of five industry grants, and nine competitive conference prizes/travel grants. For her doctoral thesis exploring factors related to pre-hospital delay in stroke she was awarded a National Heart Foundation Scholarship and received the Alfred Deakin Medal for Best Doctoral Thesis. She currently serves on a number of state and national committees/working groups, society conference committees and grant review boards.

**Dr Lahn Straney, BBI, Grad Cert Stats, PhD**

Dr Lahn Straney is a Research Fellow with the Australian Resuscitation Outcomes Consortium (Aus-ROC) within the Department of Epidemiology & Preventive Medicine (Critical Care Division). Lahn has a BSc in Biotechnology from the Queensland University of Technology, a PhD in Epidemiology and Biostatistics from the University of Queensland, a Graduate Certificate in Science, Statistics from the University of Queensland. As a graduate student, Lahn researched methods for evaluating the performance of paediatric intensive care units in Australia and New Zealand. He discovered that the length of stay in intensive care was affected by factors other than inherent differences among patients, and that administrative differences may affect unit efficiency.

Lahn was a Senior Research Fellow at the Institute for Health Metrics and Evaluation at the University of Washington from 2010 to 2012.
**Personnel**

**Dr Cindy Hein, PhD, BHSc, DipAppSc, FPA**

Dr Cindy Hein is currently employed as an Intensive Care Paramedic at South Australian Ambulance Service (SAAS). Cindy completed her PhD at Flinders University in 2009 and was the Manager of Clinical Governance at SAAS, before returning to a clinical role. Cindy has a commitment to improving cardiac arrest outcomes. She is an Advanced Life Support Instructor and a member of the SA branch of the Australian Resuscitation Council. Cindy’s clinical background, her research training and pre-hospital resuscitation expertise make her an ideal candidate for a part-time post-doctoral research position with Flinders University and SAAS, whilst maintaining a half-time clinical role.

**Dr Tiew-Hwa (Katherine) Teng BSc(Pharm), PGDipBusAdmin, PGDip Int Marketing, MPH, PhD**

Dr Teng has been employed as the Aus-ROC postdoctoral research fellow at UWA, after completing her PhD in the epidemiology of heart failure. During her time in the position, Tiew-Hwa has undertaken a systematic review of the literature investigating the association between air pollution and the incidence of OHCA. A manuscript is currently in preparation, with Aus-ROC co-authors – Williams, Finn, Jacobs and Tonkin. During this time Tiew-Hwa has also assisted with the migration of the Western Australian OHCA registry from being based on hard-copy paramedic patient care records (PCRs) to electronic patient care records (e-PCRs).

Dr Teng has resigned (as from 30 June 2013) from the Aus-ROC fellow position to take up a role in Aboriginal Health research with the Combined Universities Centre for Rural Health (CUCRH) at UWA and to undertake further study in health economics.
Ms Kylie Dyson BHsc (Hons)

Kylie Dyson received a PhD scholarship from the Australian Resuscitation Outcomes Consortium (Aus-ROC). Kylie’s thesis will focus on exploring the level of paramedic experience and exposure to out-of-hospital cardiac arrest and resuscitation interventions and how this influences performance and survival. Kylie has worked for Ambulance Victoria in Melbourne as a Qualified Ambulance Paramedic, Clinical Instructor and Paramedic Educator and will continue to work as paramedic part-time during her candidature.

PhD supervisors: Prof J Finn, Dr J Bray, A/Prof K Smith & Prof S Bernard

Dr Shelley Kirkbright MBBS, FACEM

Dr Kirkbright received a PhD scholarship from the Australian Resuscitation Outcomes Consortium (Aus-ROC) – commencing in October 2012. Shelley will investigate the effect of CPR quality measured by a Q-CPR device (Laerdal) on outcome of OHCA. Q-CPR provides paramedics with objective measurement and corrective feedback on both the compression and ventilation components of CPR in real time. The hypothesis is that better CPR will lead to better patient outcomes. Cardiac arrest occurring out of hospital (OHCA) remains a significant public health issue, with a high case fatality (>90%) despite decreasing incidence of coronary artery disease and 50 years since the advent of cardiopulmonary resuscitation (CPR). In 2010 the International Liaison Committee of Resuscitation (ILCOR) published the Consensus on Resuscitation Science and Treatment Recommendations this highlighted that most treatments could not be either supported or refuted because the evidence basis was either sparse, of low-quality or non-existent. The Australian Resuscitation Outcomes Consortium (Aus-ROC) aims to build the evidence base in OHCA.

PhD supervisors: Profs Finn, Jacobs, Thompson, and A/Prof Sprivulis
Personnel

Consumer representatives

Mr Jeff Waters
Jeff Waters is a Melbourne-based journalist for the ABC's News Division. He reports regularly for the ABC's 7PM News, ABC News 24, and radio news and current affairs programs, including AM, The World Today and PM. Jeff suffered an out-of-hospital cardiac arrest collapsing in front of his wife, who is a GP, and was lucky enough to enjoy perfect CPR until the ambulance arrived. Eventually two ambulance teams and two response groups from the local fire station - in Victoria, firefighters are also first responders to out-of-hospital cardiac arrests - battled for 56 minutes before they got a heartbeat. When they got Jeff to hospital his heart stopped several times more. He eventually pulled through and was released from hospital in a little more than a week. Then, a week after he was released he had another, smaller heart attack and went back to hospital with good reason. Jeff does voluntary work for the Heart Foundation and the Men's Shed Movement, underlining the need for recognition of the outcomes, including depression and anxiety, following cardiac arrest.

Ms Louise Owen
Louise was 30 years old, 26 weeks pregnant and at work when she unexpectedly suffered a Sudden Cardiac Arrest in front of her Year 9 students. Louise, being a teacher, had trained the students in CPR and they were very quick to respond to her situation. CPR was applied and the ambulance was called. Louise was subsequently diagnosed with Hypertrophic Cardiomyopathy. She made a complete recovery and has since received a heart transplant. Louise has been the key note speaker at International Conferences, appeared on ABC television and has had her remarkable story written in newspapers and magazines across the country. She continues to deliver the message of the importance of CPR, defibrillation and organ donation at every opportunity. Her truly inspiring story remains one of the most compelling and re-enforces the need for good quality CPR training.
**Personnel**

**Mr Brian Stafford**

Brian is a health consumer representative. He is a health consumer with a lived experience of iatrogenic harm. He says we are all health consumers, however, there is a difference; not all of us have experienced harm through medical care. Nor do all who experience such harm choose to actively engage in change to build bridges of respect and understanding. He believes he encountered clinicians that appeared to have self-imposed restrictions not to move past out-dated and known to have failed treatment options. To address that medical denial he engaged in his own research of new medical treatments. He then presented to the physician involved the latest, and peer reviewed medical options to treat their family member. He stresses these were not his medical innovations.

In 2013 he spoke at the Swiss conference ‘Communicating Medical Error’. He has been a member of MSAC’s and is a WHO Patient for Patient Safety Champion. He is a member of the Australian Association of Bioethics & Health Law. He sits with SCGH Human Research Ethics Committee; and St John Ambulance.
Aus-ROC Steering Committee Members

Aus-ROC is governed by a Steering Committee which meets bi-monthly. The Steering Committee is comprised of Chief Investigators, Associate Investigators, Executive Officer and consumer representatives – with research fellows as co-opted members and PhD students as observers.

Prof Peter Cameron  
Monash DEPM (CRE Chief Investigator ‘A’)

Prof Ian Jacobs  
UWA EM/SJA(WA)

Prof Stephen Bernard  
Monash DEPM

Prof Judith Finn  
UWA EM/ Monash DEPM / SJA(WA) (CRE Director)

(Adj) A/Prof Karen Smith  
Ambulance Victoria

Prof Peter Thompson  
Sir Charles Gairdner Hospital, Nedlands, WA

Prof Andrew Tonkin  
Monash DEPM

Prof Hugh Grantham  
Flinders Uni / SAAS

A/Prof Peter Morley  
RMH / Uni Melb

(Adj) A/Prof Tony Walker  
Ambulance Victoria

Prof Antonio Celenza  
UWA EM

Dr Teresa Williams  
UWA EM

Prof Andrew Forbes  
Monash DEPM

Prof Graham Nichol  
Uni of Washington / ROC Medical Director

Prof Gavin Perkins  
Warwick Uni Medical School

Mr Jeff Waters  
Consumer representative

Mr Brian Stafford  
Consumer representative

Ms Louise Owen  
Consumer representative

Ms Meredith (Mim) Morgan  
Monash DEPM (Aus-ROC Executive Officer)

Dr Cindy Hein  
Flinders Uni / SAAS (co-opted)

Dr Tiew-Hwa Teng  
UWA EM (co-opted)

Dr Janet Bray  
Monash DEPM (co-opted)

Dr Lahn Straney  
Monash DEPM (co-opted)
Endorsed Studies

Aus-ROC Endorsed Studies

Only studies/activities that have been formally endorsed, through the process described in the Aus-ROC Governance Document are to be referred to as an “Aus-ROC endorsed study/activity”.

The purpose of Aus-ROC endorsement is not only to ensure a consistent high standard of study design, conduct, analysis and dissemination but also to ensure that research capacity and study feasibility is optimised.

The Aus-ROC Steering Committee may need to determine the relative priority of two or more studies competing for the same target population and in such cases will follow the principles outlined in the Aus-ROC Competing Studies Policy.
Endorsed Studies

The RINSE study

Funding: NHMRC Project grant: 2011-2014; $677,888
Contact Investigator: Professor Steve Bernard S.Bernard@alfred.org.au

The Rapid Infusion of Cold Normal Saline (RINSE) study is a randomised controlled trial, funded by NH&MRC, to determine whether paramedic initiated cooling during CPR (using a rapid intravenous infusion of ice-cold normal saline) improves patient survival outcomes compared with usual practice (i.e. no prehospital cooling) in patients who are being resuscitated from out-of-hospital cardiac arrest.

A NHMRC funded, randomised controlled trial of pre-hospital use of cold normal saline during cardiac arrest to improve survival, the RINSE trial is conducted by the ambulance services of Victoria, Western Australia and South Australia.

Aims: The RINSE trial aims to demonstrate that paramedic core cooling during CPR using a rapid infusion of 30mL/kg ice-cold (4°C) normal saline, improves outcome at hospital discharge compared with standard care in patients with out-of-hospital cardiac arrest.

Method: The study will recruit 2512 patients in total. The study follows "Intention-to-treat" methodology and consists of two prospective, randomized, controlled trials running concurrently, one in patients with VF/pulseless-VT arrest, and one in patients with non-VF/pulseless VT arrest. The primary outcome measure in both trials is survival at hospital discharge. Secondary outcome measures are the rate of return of spontaneous circulation, survival to hospital admission, temperatures at hospital admission and the functional outcomes at 12 months.

Results: The RINSE trial is conducted by the ambulance services of Victoria, Western Australia (WA) and South Australia (SA). In Victoria, the trial commenced recruitment in January 2011. At the end of June 2013, 541 patients have been randomized in Victoria, 144 in Perth and 162 in South Australia (total 847). It is anticipated that the study will analyse the outcomes of 2,512 adult patients in total within the original timeframe.

The Victorian Cardiac Arrest Registry conducts the 12-month quality of life follow-up on all survivors. Victorian RINSE patient survivors have commenced the functional and quality of life outcomes telephone questionnaire. The outcome measures are the Glasgow Outcome Scale (Extended), Euro Quality of Life (EQ 5D) and SF-12 Health Survey Summary Score.

The Data Safety and Monitoring Committee will meet for the interim analysis after enrolment of 1200 patients.
Endorsed Studies

The ENDEAVOUR study

Funding: 2013 NHMRC Project grant application – under review

Contact Investigator: Associate Professor Karen Smith

The Explaining Differences in Adult out-of-hospital cardiac arrest survival in Victorian metropolitan, rural, and urban Regions (ENDEAVOUR) study is an observational study that aims to explain differences seen in out-of-hospital cardiac arrest (OHCA) survival between metropolitan, urban and rural Victoria. Routinely collected VACAR data will be supplemented by geospatial data (such as location of arrest) to allow the investigation of factors associated with the higher survival rates in the metropolitan area. The research results will directly inform ambulance strategies aimed at improving OHCA survival in rural areas.

Life after Death: Measuring and improving the quality of life after out-of-hospital cardiac arrest

Funding: 2013 NHMRC Project grant application – under review

Contact Investigator: Associate Professor Karen Smith

Out-of-hospital cardiac arrest (OHCA) is a major focus of emergency medical services internationally, but very little is known about OHCA survivors. This proposal aims to fill in the knowledge gaps related to HRQoL in the OHCA population. Adult (>17 years) cardiac arrest survivors, whose OHCA occurred during 2014 in Victoria and Western Australia, will be contacted 6-months and 12-months post arrest. A telephone interview will be administered using tools validated in critical care populations (GOS-E, SF-12 and EQ-5D) to OHCA patients or proxies, plus questions regarding work status and level of independence. After the phone interview, patients will be visited to further explore their well-being, social support, independence and perception of life post cardiac arrest using qualitative techniques. It is anticipated 250 participants will be recruited for interview, with recruitment continuing until thematic data saturation and until an appropriate range of participants is selected (demographics, level of impairment, etc). This data will be used to determine if current HRQoL tools are appropriate for OHCA survivors and to ensure that what is important to survivors is included in future outcome measures. Overall, this research aims to validate HRQoL tools in the OHCA population to more accurately measure and benchmark outcome. This is essential for accurate prognostication, assessing appropriateness of interventions and driving system improvements.
Epistry

Aus-ROC Epistry

In addition to the conduct of clinical trials (such as RINSE) the other major strategic research initiative for Aus-ROC is the development of the Aus-ROC Epistry – an epidemiologic registry of all OHCAs attended by ambulance paramedics. Initially the three CRE partner ambulance services (in Vic, SA and WA) agreed to contribute (de-identified) data to the epistry – but we are delighted that St John Ambulance (NZ); Wellington Free Ambulance (NZ); St John Ambulance (NT); and the ACT Ambulance Service have more recently agreed to participate – and we are currently in discussion with NSW Ambulance Service and Qld Ambulance Service. It is our goal that by 2014 the Epistry will include data from all Australian and New Zealand OHCAs. An Epistry Management Committee (Chaired by Prof Ian Jacobs), with representation from all ambulance services contributing data, will oversee the activities of the Epistry.

Aims of the Epistry

The specific aims of the Aus-ROC Epistry are to:

1. Establish a comprehensive ongoing data infrastructure to facilitate the design, implementation and interpretation of ROC trials.
2. Define the incidence and outcome of out-of-hospital cardiac arrest, including quality of life after hospital discharge.
3. Describe the relationships between resuscitation performance and EMS structure, adjusting for episode-specific factors.
4. Evaluate the relationships between outcome and patient, ambulance service, regional, and periodic factors.

The Aus-ROC Epistry will allow us to use retrospective cohort methodology to identify patient-specific, treatment-specific and arrest-specific factors associated with OHCA survival (short-term and long-term), using multivariate statistics. We will also investigate the management and outcomes of OHCA in rural and remote areas, with a view to identifying strategies to improve cardiac emergency service provision in non-metropolitan locations. Similarly, we will investigate the effect of socioeconomic status (as defined by Australian Bureau of Statistics’ Socio-Economic Indexes for Areas-‘SEIFA’) on the incidence and outcome of OHCA.

The longitudinal nature of the epistry will allow ‘before’ and ‘after’ studies to be performed – albeit with cognisance of the potential for bias with such studies. For example, questions such as whether OHCA patient survival improves following the implementation of International Guideline updates, can be addressed. With additional Human Research Ethics approvals, we will also broaden the telephone assessment of quality-of-life (using validated instruments) of OHCA survivors that has commenced in Victoria, to include patients from WA and SA, and use this information to calculate quality-adjusted life-years for use in our cost-effectiveness studies.

Dr Janet Bray (Aus-ROC Research Fellow at Monash Uni) has been appointed as the Coordinator of the Aus-ROC Epistry and she has been instrumental in obtaining over-arching Human Research Ethics Approval for the establishment of the Epistry at Monash University Department of Epidemiology & Preventive Medicine. Janet is currently developing the Epistry Data Dictionary and has been liaising with each of the contributing ambulance services. It is anticipated that data will start to populate the Epistry later in 2013.
Conference presentations (Aus-ROC specific)

**Building capacity in resuscitation research – why it matters.** Presented by Prof Judith Finn Invited Speaker at the Alaska Resuscitation Conference, in Anchorage, Alaska, 16-19 May 2013

**Australian Resuscitation Outcomes Consortium.** Presented by Prof Judith Finn Invited Speaker on behalf of the Aus-ROC Investigators at the Australian Resuscitation Council (ARC) Spark of Life Conference, in Melbourne, on 19 April 2013

**International Collaborations to Improve Resuscitation.** Presented by Prof Judith Finn Invited Speaker American Heart Association Resuscitation Science Symposium(AHA-ReSS), 3-4 November 2012

**Relative survival of out-of-hospital cardiac arrest patients in Perth, Western Australia.** Presented by Prof Judith Finn European Resuscitation Council 2012 Congress, Vienna, 18-20 October 2012

**Patient response to early warning signs.** Presented by Prof Judith Finn Invited Speaker Cardiac Society of Australia and New Zealand (CSANZ), Brisbane, 17-19 August 2012

**Why we need to build capacity in resuscitation research – the Australian Resuscitation Outcomes Consortium (Aus-ROC).** Presented by Prof Judith Finn Invited Speaker Australian Resuscitation Council (Victorian Branch), 2nd June 2012

**Evidence-based medicine - how the experts got it wrong.** Presented by Prof Judith Finn Invited Speaker Australian and New Zealand College of Anaesthetists(ANZCA), Perth, 12-16 May 2012

**Capacity Building in Resuscitation Science.** Presented by Prof Judith Finn Invited Speaker “Resuscitation in Motion”, University of Toronto, Toronto, Canada, 2-3 May 2012

**Australian Resuscitation Outcomes Consortium.** Presented by Prof Judith Finn Invited Speaker New Zealand Resuscitation Council, Auckland, 26-28 April 2012

**Exploring gender differences and the “oestrogen effect” in an Australian out-of-hospital cardiac arrest population.** Presented by Dr Janet Bray 9th International Spark of Life Conference (April 2013). Melbourne, Australia

Presentations and Publications

Conference Posters (Aus-ROC specific)


Other Presentations (Aus-ROC specific)

The Australian Resuscitation Outcomes Consortium (Aus-ROC) – a NHMRC CRE. Seminar presentation by Prof Judith Finn to the School of Primary, Aboriginal and Rural Health Care at the University of Western Australia, 16 February 2012.

The Australian Resuscitation Outcomes Consortium (Aus-ROC) – Out-of-hospital Cardiac Arrest Registry (‘Epistry’). Presentation made by Prof Judith Finn at the CRE in Patient Safety, Registry Special Interest Group (SIG) meeting at Monash University 20 April 2012.

Overview of the Australian Resuscitation Outcomes Consortium (Aus-ROC). Presentation made by Prof Judith Finn and Prof Ian Jacobs to the SA Ambulance Service Senior Management Committee (SMC) Governance Meeting on 25 July 2012.
Presentations and Publications

Other Conference Presentations / Posters by Aus-ROC Investigators

*Professor Peter Cameron*


**Neurotrauma 2012**, Annual Conference of the National Neurotrauma Society of India, Kochi India, August 2012.

**Diagnosis and Clinical Management: Sepsis Management Plan Predictors of mortality risk**, World Sepsis Day, Sepsis: A Medical Emergency, Sacre Coeur Hospital and the National School of Emergency Care, Lebanon, September 2012.

**Golden Hour: a real issue or an urban legend**, 14th Annual Conference of the Society for Emergency Medicine, India, New Delhi, India, November 2012.

**Dare to Differ and Debate**, 14th Annual Conference of the Society for Emergency Medicine, India, New Delhi, India, November 2012.

**Developing an Academic EM Program: Options and Opportunities**, 14th Annual Conference of the Society for Emergency Medicine, India, New Delhi, India, November 2012.


**Breaking down the silos, Demography is Destiny: Emergency Care and Population Ageing Summit**. Melbourne, March 2013.


Presentations and Publications

**Professor Ian Jacobs**


*Are Physicians redundant in pre-hospital care?* Invited Speaker, European Resuscitation Council – Resuscitation 2013, Krakow 2013

*How do we study the Epi Question?* Invited Speaker, Resuscitation and Critical Care Interventions Conference, Anchorage 2013

*The PACA trial*, Invited Speaker, Resuscitation and Critical Care Interventions Conference, Anchorage 2013

*Utstein Templates – An update*, Invited Speaker, European Resuscitation Council, Vienna 2012

*Updating the ILCOR Guidelines*, Invited speaker, New Zealand Resuscitation Council Meeting, Auckland 2012

*Clinical Dashboards – Measuring effectiveness of pre-hospital care*, Invited Speaker, Council of Ambulance Authorities, Canberra 2013

*The impact of new pre-hospital practitioners on Emergency Department services: A systematic review and meta-analysis*, Free Paper, Paramedics Australasia, Canberra 2013

*Identification of Acute Pulmonary Oedema in the Pre-hospital Setting*, Free Paper, Paramedics Australasia, Canberra 2013


*The role of Extended Care Paramedics*, Invited speaker, Emergency Demand in older Australians - CREPS Symposium, Melbourne 2013

*Pre-hospital Thrombolysis for All*, Invited Speaker, Cardiac Society of Australia and New Zealand, Gold Coast 2012

*Resuscitation Updates*, Invited Speaker, Australian Resuscitation Council (Victorian Branch), Melbourne 2012

**Professor Judith Finn**


**Professor Andrew Tonkin**

*“Statins and Prevention of Atherosclerosis”* 2012 International Atherosclerosis Society, Sydney, Australia, 2012

*“ESC Guidelines: Prevention Including Lipids”* 1st International 4 Corners of Cardiology Meeting, Melbourne, Australia, 2012

*“Quantifying Access to Cardiology Services from Population Centres Across a Country” The 85th Scientific Sessions, American Heart Association, Los Angeles, USA, 2012

*“The UMPIRE Study” The 85th Scientific Sessions, Australian Resuscitation Outcomes Consortium*
Presentations and Publications

“Investigator-Initiated Clinical Trials” Cardiac Society of Australia and New Zealand, Symposium, 2012: Clinical Trials in Australia and New Zealand – What is the Future?

“Prevention in the Elderly” 5th Annual AMREP World Health Day Conference, Melbourne, Australia, 2013

Prevention in the Elderly” 61st Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand, Gold Coast, Australia, 2013

Germany “New Innovative Strategies: Lipid Therapy” Hamburg Heart Days, Hamburg, Germany, 2013

“Population Health Perspectives on Cardiovascular Disease” Hamburg Heart Days, Hamburg, Germany, 2013

A/Prof Karen Smith
International College of Emergency Medicine (ICEM) Conference July 2012


Smith K, on behalf of the VACAR steering committee. ICEM Panel. The Victorian Cardiac Arrest Registry.


Smith K, Bray J, Cameron P, Bernard S, on behalf of the VACAR Steering Committee. Victorian Ambulance Cardiac Arrest Registry (VACAR) – over a decade of results from Victoria, Australia.

Smith K, Bray J, Stub D, Stephenson M and Bernard S on behalf of the AVOID Investigators. Avoid methods and experience of initial randomisations.

Smith K, Cox S, Morrison C and Cameron P. The epidemiology of trauma in Victoria Australia.


Paramedics Australasia Conference (Hobart 2012)

Smith K, Cameron P, Bernard S, Nehme Z, on behalf of VACAR steering committee. Victorian Ambulance Cardiac Arrest Registry (VACAR): over a decade of results from Victoria, Australia.

Presentations and Publications

Smith K, Morgans A. Improving Patient Outcomes via Pre-hospital Registries.
K. Smith, J. Bray, D. Stub, M. Stephenson, S. Bernard on behalf of the AVOID Steering Committee. The ‘Air Versus Oxygen In myocarDial infarction’ (AVOID) study: trial methods and experience from initial randomisations.
Council of Ambulation Authorities National Conference (Hobart 2012)
Cardiac Society Australia and New Zealand Annual Conference (Brisbane, August 2012)
Centre of Research Excellence in Patient Safety (Monash University- Registry Special Interest Group Melbourne 2012)
Lijovic M, Smith K. Victorian Ambulance Cardiac Arrest Registry (VACAR).
Australian Professional Society on Alcohol and other Drugs (APSAD) conference 2012
QianWang, Belinda Lloyd, David Best ,Karen Smith, Dan Lubman. Increasing harms associated with cannabis? Trends over time in characteristics of cannabis-related ambulance attendances in Melbourne
National Trauma Research Institute Conference 2012
Stephen Bernard, Karen Smith, Peter Cameron and Tony Walker : Translation from clinical trial to clinical practice: Implementation of the Paramedic RSI Program
Stephen Bernard, Karen Smith, Peter Cameron and Tony Walker : Paramedic RSI Reduces Medical and Rehabilitation Costs in Patients with Severe Traumatic Brain Injury
Australian Resuscitation Council, 10th International Spark of Life Conference (April 2013, Melbourne)
M Lijovic, S Bernard, K Smith, on behalf of the VACAR Steering Committee. The impact of out-of-hospital cardiac arrest on the quality of life of adult survivors.
M Lijovic, S Bernard, Z Nehme, T Walker, K Smith, on behalf of the VACAR Steering Committee. The impact of defibrillation by members of the public on cardiac arrest survival in Victoria.
K Smith, D Stub, Z Nehme, J Bray, M Stephenson
STUDY: TRIAL METHODS & EXPERIENCE FR
**Presentations and Publications**

*Heart Foundation Conference (May 2013, Adelaide)*


M Lijovic, S Bernard, Z Nehme, T Walker, K Smith, on behalf of the VACAR Steering Committee. The impact of defibrillation by members of the public on cardiac arrest survival in Victoria.

*Cardiac Care Network (May 2013, Melbourne)*
K Smith. Overview of the Victorian Ambulance Cardiac Arrest Registry.

*Trauma 2013, Whistler Canada April 2013*

**Dr Teresa Williams**

**Dr Janet Bray**
- Annual Scientific Meeting of the Australasian Stroke Society (July 2013). The Australian public’s knowledge of stroke symptoms improves following national education campaigns. Darwin, Australia.
- 9th International Spark of Life Conference arrest population. Melbourne, Australia

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**Aus-ROC**
Australian Resuscitation Outcomes Consortium
Presentations and Publications

- National Heart Foundation Conference (May 2013). The Australian public’s knowledge of stroke symptoms improves following national education campaigns. Adelaide, Australia.

Dr Lahn Straney
- Population Health - Methods and Challenges Conference, (April 2012); Small area estimation models for providing local area estimates of breast and cervical cancer screening prevalence in the United States. Birmingham, United Kingdom.

Ms Kylie Dyson
Presentations and Publications

Publications (Aus-ROC Investigators)

**Professor Peter Cameron**


20. Lowthian JA, Cameron P. Examining emergency medicine’s role in caring for our vulnerable, elderly patients. Emergency Physician International 2012; 38


29. Mitra B, Cameron PA. Emergency Department overcrowding and mortality after the introduction of the 4-hour rule in Western Australia. The Medical Journal of Australia 2012; 196 (8): 499


Presentations and Publications


42. Mitra, B. and P. Cameron. Clinical decision rules for the assessment of mild head injury, used in combination with clinical judgment, can inform the use of head imaging. Evidence-Based Medicine 2012 17(1): 28-9


65. Kandane-Rathnayake R., Willis C., Beiles C., Use for Refractory Bleeding During Abdomi
Presentations and Publications


Professor Ian Jacobs


Professor Stephen Bernard


Professor Judith Finn

Professor Peter Thompson

11. Lewis JR, Lim W, Dhaliwal SS, Zhu K, Lim EM, Thompson PL, Prince RL. Estimated glomerular filtration rate as an independent predictor of atherosclerotic vascular disease in older women. BMC Nep


**Associate Professor Karen Smith**


Presentations and Publications


Professor Andrew Tonkin


23. Briffa TG, Tonkin A. Put disease prevention Aus-ROC

**Professor Hugh Grantham**


**Associate Professor Peter Morley**

**Associate Professor Tony Walker**

**Dr Teresa Williams**

Professor Graham Nichol


Dr Janet Bray


Presentations and Publications


Dr Lahn Straney

Ms Kylie Dyson

INCOME

NHMRC Grant $843,027  
Income - HMRC Interest $2,165  

Total Income $845,193  

PAYMENTS

Payment to University of Western Australia $225,120  
Payment to Flinders University $87,143  

Total Payments $312,263  

EXPENDITURE

Monash University staff costs $248,478  
Direct Research costs $42,253  

Total Expenditure $603,264  

Balance at 30 June 2013 $241,929