

# Environmentally Influenced Cardiovascular Disease: From Fetus to the Adult

## Keynote speakers

### Professor Kevin Grove, USA

Kevin L. Grove, Ph.D., is an Associate Scientist in the Division of Neuroscience at the Oregon National Primate Research Center. He is also the Director of the Obese Resource and Co-Director of the Metabolic Disease Working Group. Dr. Grove joined the ONPRC in 1996. Dr. Grove received his B.Sc. in the Department of Animal Science at Washington State University in 1990, and his Ph.D. in Neuroscience from the College of Veterinary Medicine at the same university in 1994. He did his post-doctoral work at the Institute of Clinical Research of Montreal in Quebec, Canada.



### Professor Joseph Proietto

Joe Proietto is the inaugural Sir Edward Dunlop Medical Research Foundation, Professor of Medicine, in the Department of Medicine Austin Health, University of Melbourne. He established one of the first obesity clinics in a Victorian public hospital at the Royal Melbourne Hospital. Since moving to the Repatriation hospital he has established the Weight Control Clinic at Austin Health. He is a past president of the Australasian Society for the Study of Obesity and was the Chair of the Program Organising Committee for the 10th International Congress of Obesity Sydney.



## Early Career International Awardee

### A/Prof Alta Schutte, South Africa

Associate professor Alta Schutte is the Coordinator of the Hypertension in Africa Research Team (HART) in South Africa. Their group strives to understand and ultimately alleviate the immense burden of hypertension being suffered by the African population. Via their own clinical research and also by collaborating with various hypertension researchers internationally they have published extensively regarding hypertension, the metabolic syndrome, inflammation, obesity and adipokines, as well as psychosocial factors affecting hypertension in South Africans.



## Local speakers

### Dr James Armitage, Monash University

James Armitage completed his PhD studies in 2003 and undertook postdoctoral studies at King's College London before returning to Australia in 2007. He is a Monash Fellow in the Department of Anatomy and Developmental Biology. James' research questions how maternal diet in pregnancy affects fetal and neonatal development and examines the consequences of maternal diets imbalanced in macronutrients and crucial micronutrients.



### Prof Emilio Badoer, RMIT University

Professor Badoer is the Head of the Neuropharmacology and Neuroinflammation Research Group. His laboratory's major projects are focussed on the brain areas involved in sympathetic nerve regulation in diabetes, obesity and heart failure. His work is currently funded by the NHMRC and DART. He has held positions on the councils of several scientific societies. Currently, he is Professor of Neuropharmacology in the School of Medical Sciences, RMIT University, Program Coordinator of the Pharmaceutical Sciences undergraduate program and Chair of the Research Committee.



### Dr Anne Barden, University of Western Australia

Dr Anne Barden is a Research Fellow in the School of Medicine and Pharmacology, University of Western Australia. She has a strong background in analytical biochemistry and a particular interest in factors contributing to the pathophysiology of preeclampsia and gestational diabetes and the role of these conditions as risk factors for cardiovascular disease.



### Prof Lawrie Beilin, University of Western Australia

Lawrie Beilin is Professor of Medicine in the School of Medicine and Pharmacology at the Royal Perth Hospital Unit, Honorary Consultant at RPH, and is Vice President of the World Hypertension League and Chair of the Royal Perth Hospital Medical Research Foundation. Professor Beilin has a distinguished academic and scientific research career. For the past 40 years he has been engaged in research into high blood pressure, beginning in London and Oxford with pioneering studies into the treatment of hypertension in pregnancy and initiation of one of the earliest applications of computers to routine clinical practice. Over the last 30 years he developed the Cardiovascular Research Centre at the University of Western Australia, which has been responsible for major advances in understanding the role of diet and lifestyle in high



#### **Dr Clinton Bruce, Baker IDI Heart and Diabetes Institute**

Dr Bruce was awarded his Ph.D. in Physiology from RMIT University in 2003 and completed postdoctoral training at The University of Guelph, Canada and the Garvan Institute of Medical Research before relocating to the Baker IDI Heart and Diabetes Institute. His research focuses on how dysfunctional lipid metabolism causes insulin resistance.



#### **Dr Kate Denton**

#### **Dr Sandra Eades, Baker IDI Heart and Diabetes Institute**

#### **Dr Karen Gibson**

Dr Karen Gibson (MBBS, BMedSc, PhD) is a senior lecturer in the School of Medical Sciences at UNSW. She specialises in chronic physiological studies of renal and cardiovascular function during development. Her current research focuses on the programming effects of maternal renal impairment. She has published 40 peer reviewed manuscripts.



blood pressure and cardiovascular disease. Professor Bellin was awarded the Prime Ministers Centenary Medal 2001 and the Officer of the Order of Australia in the General Division (AO) 2003 for his contributions to medical education and research. The AMA (WA Award in 2006 for his outstanding research into hypertension and cardiovascular disease and his influence on the teaching of today's medical students. He was from 2006-2008 the Sir Louis Matheson Distinguished Visiting Professor Monash University.

#### **Prof Ian Caterson, University of Sydney**

Since 1997 Ian Caterson has been Boden Professor of Human Nutrition at the University of Sydney. He has recently been appointed Director of the Boden Institute of Obesity Nutrition & Exercise at the University. His research interests are in insulin resistance, type 2 diabetes, and the causes, prevention and treatment of obesity & diabetes.



#### **A/Prof John Dixon, Monash University**

Associate Professor John Dixon is a senior clinical scientist with the Human Neurotransmitters Laboratory at the Baker IDI Heart and Diabetes Institute and Head, Obesity Research Unit at Monash University's Department of General Practice. He has been involved with treatment and management of obese patients since 1997 and is known internationally for his research and education programs. His background in primary care has enabled a diverse examination of the problems and diseases related to severe obesity with over 100 peer reviewed journal articles, including the first RCT of bariatric surgery for weight loss in diabetes published in JAMA in 2008.



#### **Dr Pablo Enriori, Monash University**

Dr Pablo Enriori earned a BS in Biochemistry from the University of Buenos Aires, where he also completed a Masters Degree and a PhD in Clinical Endocrinology. He continued his postdoctoral training at the Oregon Health & Science University (USA). He moved from the United States and recently joined the Department of Physiology at Monash University in 2008. Dr Enriori's research interests are in better understanding how obesity disturbs the physiological processes of energy balance and glucose homeostasis. More specifically, he is focusing on the role of melanocortin resistance to leptin and glucose and how these could lead to diabetes/metabolic syndrome.



#### **Dr Elisabeth Lambert, Baker IDI Heart and Diabetes Institute**

Dr Elisabeth Lambert is an NHMRC RD Wright Research Fellow at the Baker IDI Heart & Diabetes Institute in the Human Neurotransmitters Laboratory. She is an expert in clinical microneurography and is currently involved in a number of studies investigating mechanism of cardiac risk in depression and panic disorder, understanding the dysregulation of the sympathetic nervous system in patients with orthostatic



**Prof Margaret Morris, University of New South Wales**

Margaret Morris is Professor and Head of Pharmacology within the School of Medical Sciences, UNSW. She heads an active neuroendocrine pharmacology research group, with funding from by NH&MRC, ARC and Diabetes Australia, using animal models of obesity and diabetes to explore brain mechanisms involved in food intake and metabolism. Research interests include brain regulation of feeding; physiological models of obesity, including early onset obesity and maternal obesity; the cardiovascular consequences of obesity; diabetes, and glucose sensing by the brain. Her work addresses the fundamental issue of how does provision of a varied, energy rich diet usurp the regulatory control mechanisms that should maintain body weight?



**Dr Karen Moritz, University of Queensland**

Dr Karen Moritz completed a PhD in 2001 with Professor Marelyn Wintour at the Howard Florey Institute and then undertook a post-doctoral fellowship with Professor John Bertram at Monash University. In 2006 she moved to the University of Queensland to establish her own laboratory where she is exploring the role of the kidney in the programming of adult onset disease.



**Prof Brian Oldfield, Monash University**

Brian Oldfield is an NHMRC Principal Research Fellow and Professor in the Department of Physiology, Monash University. His research interests extend from the central control of the autonomic nervous system (obesity hypertension) to the central mediation of energy balance and the regulation of body weight and glucose metabolism. He is the current Chair of the Executives of both the Monash Obesity Research Initiative and the Victorian Obesity Consortium.



intolerance and investigating the effects of weight loss on cardiac risk in patients with the metabolic syndrome as well as the deleterious effects of sympathetic activation in generating subclinical changes in obesity.

**Dr Janna Morrison, University of South Australia**

An accomplished researcher in the field of fetal development, Janna Morrison is co-head of the Sansom Institute's Early Origins of Adult Health Research Group. Her current research centres on the development of fetal behavioural states, including neural, respiratory and cardiovascular systems. After completing her PhD at the University of British Columbia, Janna held postdoctoral positions at University of Toronto and the University of Adelaide before joining the Sansom Institute for Health Research in 2006. Among her numerous awards and achievements, Janna received a South Australian Tall Poppy Science Award (2006) in recognition of her work examining the link between low birth weight and heart disease in adulthood.



**Dr Beverley Mulhausler, University of South Australia**

Dr Muhlhausler is an NHMRC Peter Doherty Postdoctoral Fellow in the Sansom Institute for Medical Research at UniSA. Her research focuses on the early life origins of obesity and metabolic disease, in particular the mechanisms by which being exposed to prenatal overnutrition (through maternal obesity, maternal diabetes or a maternal high fat diet) programs an increased risk of obesity and type 2 diabetes in the offspring. More recently, Dr Muhlhausler has been working to identify possible interventions, which can be applied during pregnancy or early infancy to reduce fat deposition and improve long-term health outcomes for the offspring. Since 2002, Dr Muhlhausler has published 19 peer-reviewed journal articles, and co-authored 3 book chapters.



**A/Prof Claire Roberts, University of Adelaide**

Claire Roberts leads the Placental Development Laboratory in the Research Centre for Reproductive Health, Robinson Institute, University of Adelaide. Her research focuses on the interaction between genetic and environmental factors that regulate how the placenta invades maternal arterioles, differentiates and functions. Defects in placental invasion and function are associated with a variety of pregnancy complications including preeclampsia, pre-term birth and intrauterine growth restriction. She has 50 publications and has filed 6 patent applications on her research which includes the use of animal models and human studies for both basic and applied research. Claire has been awarded the 2009 International Federation of Placenta Associations Award in Placentology, the most prestigious award from the Federation. She is regularly invited to speak at National and International meetings on placenta and pregnancy complications. A major aim of her research is to identify genetic markers in pregnancy trios associated with adverse pregnancy outcomes to develop genetic tests that predict couples at risk.



**Dr Matt Sabin, Murdoch Children's Research Institute**

Dr Matt Sabin is a UK-trained paediatrician, currently completing FRACP with sub-speciality expertise in Paediatric Endocrinology and Diabetes. He has extensive clinical and basic science research experience in the area of childhood obesity. His PhD explored mechanisms relating childhood obesity and insulin resistance. He is a lead clinician in the Weight Management Service at the Royal Children's Hospital in Melbourne. His current research program is focussed on identifying factors that predispose some obese children to developing severe weight-related complications, particularly with an emphasis on early life programming.



**Dr Marianne Tare, Monash University**

Marianne Tare's research focus is on the mechanisms that regulate the function of resistance arteries in health and disease. The vasculature exhibits exquisite regional variation in the endothelial, nervous and smooth muscle mechanisms that culminate in local regulation of blood flow. These differences also contribute to regional susceptibility to disease across the vasculature and a research focus is to identify the region specific control mechanisms. Some of the diseases currently under investigation include diabetes, gestational diabetes, hypertension and Raynaud's disease. Her research focus also encompasses changes in vascular function arising from early life environmental insults. Currently, in collaboration with colleagues in Australia and overseas, she is investigating the mechanisms of vascular dysfunction in response to four different types of early life insults ranging from nutritional deficiencies through to substance abuse.



**Dr Nora Straznicky, Baker IDI Heart and Diabetes Institute**

Dr Nora Straznicky is a clinical cardiovascular researcher at the Baker IDI Heart & Diabetes Institute. Her research program investigates the mechanisms contributing to sympathetic nervous system overactivity in metabolic syndrome obesity and the benefits of lifestyle and pharmacological interventions.



**A/Prof Mary Wlodek, University of Melbourne**

Mary Wlodek graduated with a BSc(Hons) and MSc (University of Western Ontario, London, Canada) and PhD (1991, Monash University, Australia). Mary is currently Associate Professor, in Physiology, Faculty of Medicine, Dentistry and Health Sciences. Additionally, Mary is also Associate Dean Melbourne School of Graduate Research. Associate Professor Wlodek's Fetal, postnatal & adult physiology and disease laboratory has defined the physiological and molecular mechanisms as well as the critical nutritional environments that program adult diseases in offspring born small. More recently, her studies have identified the transfer of disease risk between generations.

