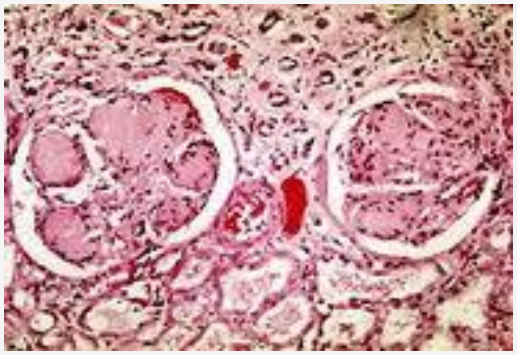
Tubulointerstitial Disease in Diabetic Nephropathy

October 4 - 7, 2012
Melbourne, Australia

ISN FOREFRONTS 2012

PROGRAM



Advancing Nephrology around the World

Program

Thursday October 4, 2012	
16:30-16:45	***Welcome and opening remarks***
16:45-17:45	**Opening Plenary Lecture** **The Tubulointerstitium in the Progression of Diabetic Nephropathy** **Chair: Prof. Mark Cooper** (i) **Dick De Zeeuw**, University of Groningen, Netherlands - "The Clinical Problem" (ii) **Assam El-Osta**, Baker IDI Heart and Diabetes Institute, Melbourne, Australia - "Recent Advances in Epigenetics – Metabolic Memory"
18:00	**Welcome Reception** ***(Baker IDI Heart and Diabetes Institute, Level 7, 75 Commercial Road)***

Friday October 5, 2012	
09:00-10:30	**Session I: Micro RNA and Extracellular Matrix Accumulation** **Chairs: Prof. Hui Lan and Dr. Phillip Kantharidis** **John Mattick,** IMB, University of Queensland, Queensland, Australia – "The Epigenetic Control of Human Development and Disease: Characterization of Long Noncoding Rnas in a Mouse Model of Diabetic Nephropathy" **Catherine Godson,** University of Central Dublin, Ireland – "Novel Mediators of Regression and Progression in Diabetic Nephropathy" **Phillip Kantharidis,** Baker IDI Heart and Diabetes Institute, Melbourne, Australia - "MicroRNA in Renal Fibrosis" **Oral Presentations chosen from abstract:** o **Lan Hui,** The Chinese University of Hong Kong, China – "MicroRNA-29 Inhibits Diabetic Nephropathy by Targeting TGF-b/Smad3-NF-κB-Th1 Pathways" o **Aaron McClelland,** Baker IDI Heart & Diabetes Institute, Melbourne, Australia – "miR-21 Regulates Renal Fibrogenesis via a Mechanism that involves SMAD7 in a Model of Diabetic Nephropathy" ***(Abstracts from oral presentations can be found in the book of abstracts)***
10:30-11:00	**Coffee Break**
11:00-12:30	**Session II: ATP Production and Bioenergetics** **Chairs: A/Prof. Josephine Forbes and Dr. Mike Ryan**

	David Thorburn, Murdoch Children's Research Institute, Melbourne, Australia – "Biochemistry & Genetics of Energy Production" **Melinda Coughlan**, Baker IDI Heart and Diabetes Institute, Melbourne, Australia – "Mitochondrial Cytopathies and Renal Disease" **Janos Peti-Peterdi**, University of Southern California, Los Angeles CA, USA – "Tubular Renin, Succinate and Diabetes"
12:30-14:00	**Lunch Break and Poster Viewing I**
14:00-15:30	**Session III: T Regulatory Cells in the Tubulointerstitial Compartmen** **Chairs: Prof. David Harris and A/Prof. Robyn Slattery** **Erika Cretney,** The Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia – "The Transcription Factors Blimp-1 and IRF4 Control the Differentiation and Function of Effector Regulatory T Cells" **Richard Kitching,** Monash Medical Centre, Australia – "Regulatory T Cells: Their Potential Roles in Renal Disease" **Stephen Alexander,** Centre for Kidney Research, Children's Hospital Westmead, Sydney, Australia – "Therapeutic and Atypical Tregs in Renal Disease" **Oral Presentations chosen from abstract:** o **Harshini Mudaliar,** University of Sydney, Australia – "The Role of Toll-Like Receptor Proteins (TLR) 2 And 4 in Mediating Inflammation in Human Proximal Tubular Cells (PTCs)" o **Sungjin Chung,** The Catholic University of Korea Seoul, Korea – "Haploinsufficiency of the'bis' Gene Aggravates Diabetic Nephropathy by Increasing Oxidative Stress ***(Abstracts from oral presentations can be found in the book of abstracts)***
15:30-16:00	**Afternoon Coffee Break**
16:00-17:30	**Session IV: Renal Glucose Uptake Gluconeogenesis** **Chairs**: Prof. Dick deZeeuw and Prof. Catherine Godson **Volker Vallon,** University of California, San Diego, USA – "Role of SGLTs in Glucose Homeostasis and Kidney Function in Diabetes" **Carol Pollock,** University of Sydney, New South Wales, Australia – "SGLT2 Transporters" **Oral Presentation chosen from abstract:** o **Berthold Hocher,** University of Potsdam, Germany – "DPP-4 Inhibition with Linagliptin Delays the Progression of Diabetic Nephropathy in 'Db/Db' Mice" ***(Abstracts from oral presentations can be found in the book of abstracts)***

20:00	**Official Dinner** ***(Functions on Chapel, 255A Chapel Street, Prahran 3181)***

Saturday October 6, 2012	
09:00-10:30	**Session V: Regeneration of Tissues – New for Old** **Chairs: Prof. Rhian Touyz** **Jeremy Duffield**, University of Washington, Seattle, USA, - "The Role of Microvascular Pericytes in Interstitial Kidney Disease" **Enzo Porrello**, University of Queensland, Queensland, Australia – "Heart-Broken –Regenerating the Heart" **Sharon Ricardo**, Monash University, Clayton, Australia – "Cellular-based Therapies for Kidney Repair and Regeneration"
10:30 – 11:00	**Coffee Break**
11:00-12:30	**Session VI: Cell Trafficking – Lessons Learnt from Other Sites** **Chairs: Prof. Hanna Abboud and A/Prof. Rebecca Ritchie** **Dale Abel,** University of Utah, USA – "Mitochondrial Adaptations to Obesity and Lipid Overload" **Mike Ryan,** LaTrobe University, Melbourne, Australia - "Mitochondrial Dynamics in Health and Disease" **Andrew Hill,** Bio21 Molecular Science and Biotechnology Institute, Melbourne, Australia – "Investigating The Role Of Exosomes In The Trafficking Of Proteins And Rna Associated With Neurodegenerative Diseases"
12:30-14:00	**Lunch Break/Poster Viewing II**
14:00-15:30	**Session VII: Inflammation** **Chairs: A/Prof. Greg Tesch and Prof. Thomas Coffman** **Giovanni Solinas**, University of Freiburg, Switzerland – "Pro-Inflammatory Kinases in Obesity & Diabetes" **Greg Goodall**, Adelaide Hanson Institute, South Australia, Australia - "Regulatory Pathways Controlling EMT involving miR-200 and TGFβ" **David Harris**, Westmead Millennium Institute, Sydney, Australia – "Cost Effectiveness of Early Initiation Of Dialysis" **Oral Presentation chosen from abstract:** o **Juko Asakura**, Saitama Medical University, Japan – "A Study of Pioglitazone-Induced Modification of Renal Tubular Functions Relating to the Renoprotection and Fluid Retention in Rats With Type-2 Diabetes" ***(Abstracts from oral presentations can be found in the book of abstracts)***

15:30-16:00	**Afternoon Coffee Break**
16:00-17:30	**Session VIII: Redox Imbalances and Post-translational Modifications** **Chairs: Prof. Karin Jandeleit-Dahm and Dr. Melinda Coughlan** **Rhian Touyz**, University of Glasgow, UK – "NADPH Oxidases in Vasculature" **Hanna Abboud**, Department of Medicine, University of Texas, Health Science Center at San Antonio, USA – "NADPH Oxidases and Diabetic Complications" **Josephine Forbes**, Mater Medical Research Institute, South Brisbane, Australia - "Advanced Glycation and Glucose Handling"
17:30	**Poster Session III**
Sunday October 7, 2012	
09:00-10:30	**Session IX: Lessons Learnt from Podocytes** **Chairs: Prof. Robert Atkins and A/Prof. David Nikolic Paterson** **Katalin Susztak,** University of Pennsylvania, USA - "The Podocyte and Diabetic Nephropathy" **Richard Coward,** Academic research unit, university of Bristol, UK – "Insullin Signaling To The Podocyte; Insights From Knockouts" **Thomas Coffman**, Duke University, North Carolina, USA – "Mouse Models for Understanding Genetic Mechanisms of Diabetic Nephropathy"
10:30 - 11:00	**Coffee Break**
11:00 – 12:00	**Session X: Taking Things Outside the Body** **Chair: Prof. Merlin Thomas** **Melissa Little,** Institute for Molecular Bioscience, University of Queensland, Brisbane, Australia – "Novel Options for Recreating the Kidney" **Adam Hill,** Victor Chang Cardiac Research Institute, Darlinghurst, Australia - "Computational Reconstruction of Electrical Activity in the Heart"
12:00 – 12:30	**Tribute to Professor Angelika Bierhaus –** Merlin Thomas, Baker IDI Heart and Diabetes Institute, Melbourne, Australia
12:30 – 13:00	**Closing Remarks – Merlin Thomas and Mark Cooper, Baker IDI Heart and Diabetes Institute, Melbourne, Australia**

Speakers' Portfolio

Hanna E. Abboud

Hanna E. Abboud is the Jay Stein Professor of Medicine and Director of the Division of Nephrology at the University of Texas Health Science Center at San Antonio. He has over thirty years experience in conducting research related to kidney disease. Over the past eighteen years, his research focused on cellular mechanisms of diabetic nephropathy and in particular the role of oxidative stress and NADPH oxidases in glomerular and tubulo-interstitial injury. His studies established a role for selected isoforms of NADPH oxidases in mediating glomerular mesangial and epithelial injury in vitro and in rodent models of diabetic nephropathy. Dr. Abboud trained over forty postdoctoral fellows and house-staff and mentored several junior faculty. His research program is funded through the Veterans Administration, National Institutes of Health and the Juvenile Diabetes Research Foundation. He also served as a member and Chair of study sections at the National Institutes of Health and the Veterans Administration.

Dale Abel

E. Dale Abel is Chief of the Division of Endocrinology and Metabolism at the University of Utah School of Medicine, holder of the Josie I Johnson Professorship in Molecular Biology, and immediate past president of the Society for Heart and Vascular Metabolism. Dr. Abel's current research interests focus on elucidating the molecular mechanisms leading to cardiovascular dysfunction in diabetes, obesity and the metabolic syndrome. His laboratory has elucidated the interactions between changes in insulin and leptin signaling and mitochondrial dysfunction in diabetic cardiomyopathy, and novel mechanisms by which lipids impair mitochondrial function. Dr. Abel has been the recipient of numerous scholastic honors, including the Established Investigator Award of the American Heart

Association and the 2012 Gerald D. Aurbach Award of the Endocrine Society.

Stephen Alexander

Stephen Alexander is a peadiatric nephrologist with a research interest in tolerance in transplantation and kidney disease, in particular the role of Tregs and their potential therapeutic use. He is the laboratory head of the Centre for Kidney Research at Children's Hospital at Westmead, University of Sydney. He did his medical training in Melbourne and his research training in Boston, before moving back to Sydney.

Thomas M.Coffman

Dr. Thomas Coffman is the James R.Clapp Professor of Medicine,Chief of the Division of Nephrology,Senior Vice-Chair in the Department of Medicine,and Director of the Duke Cardiovascular Research Center at Duke University MedicalCenter.He also serves as Di"rector of Cardiovascular and Metabolic Disorders Program at the Duke-NUS Graduate Medical Schoolin Singapore. Or.Coffman graduated from the University of Pennsylvania and obtained his M.D.from the Ohio State University Schoolof Medicine. He undertook his internalmedicine and nephrology training at Duke. A nationalleader in the field of nephrology,Dr.Coffman is Past-President of the American Society of Nephrology.He is also a member of the American Society for Clinical Investigation and the Association of American Physicians,and served on the Nephrology Subspecialty Board of the American Board of Internal Medicine (ABIM). He serves on a number of editorial boards including Physiological Reviews and Cell Metabolism. He is a Fellow of the Councils for High Blood Pressure Research and the Kidney in Cardiovascular Disease of the American Heart Association,and serves on the leadership Committee for the AHA Council for High Blood Pressure Research.Dr.Coffman's

research interests include the renin-angiotensin and prostanoid systems and their role in regulatingblood pressure,kidney function,and renalinflammation. He is also a member of the NIH-funded AnimalModels of Diabetes Complications Consortium. His laboratory work is supported by grants from the NIH,the Department of Veterans' Affairs,and the Edna and Fred L. Mandel Center for Hypertension and Atherosclerosis Research.

Mark Cooper

Dr Mark Cooper is the Chief Scientific Officer of the Baker IDI Heart & Diabetes Institute as well as the Director of the JDRF Centre for Diabetes Complications at the Baker IDI Heart and Diabetes Institute. He is currently supported by the National Health & Medical Research Council of Australia at its highest level, as an Australian Fellow. He holds honorary appointments as a Professor of Medicine at both Monash University and University of Melbourne. He is a trained endocrinologist who continues, albeit part time to look after patients with diabetes and endocrine disorders. His research encompasses basic, preclinical and clinical research with the major aim to reduce the major burden of diabetes, its renal and vascular complications. He has received multiple prizes including the Susman Prize from the Royal Australasian College of Physicians, the Australian Diabetes Society (ADS) Kellion award and the JDRF Scholars award. His recent research has focussed on the role of epigenetics in diabetic vascular complications, and in particular in elucidating the molecular mechanisms responsible for the sustained efforts of prior hyperglycemia on diabetic vascular complications. He is regularly invited to international meetings and has over 400 peer reviewed publications.

Melinda Coughlan

Dr Melinda Coughlan has a BSc Honours in Nutrition and PhD in Obstetrics & Gynaecology from the University of Melbourne. Her PhD focused on pro-inflammatory and oxidative stress mediators in human gestational diabetes (Mercy Hospital for Women). After finishing her PhD, Dr Coughlan was recruited to the Glycation Laboratory at Baker IDI Heart & Diabetes Institute as a postdoctoral researcher. In 2012 she became the group leader of the Glycation, Nutrition & Metabolism group at Baker IDI. Dr Coughlan is supported by a Career Development Fellowship from Roche and the Australian & New Zealand Society of Nephrology. She currently holds research grants from the National Health and Medical Research Council of Australia and is Adjunct Senior Lecturer in Monash University's Department of Medicine, Central Clinical School. Dr Coughlan has over 30 publications in well respected journals such as Diabetes, J Am Soc Nephrol, Kidney International, Antioxidants and Redox Signaling and Diabetologia.

Richard Coward

Richard Coward is a Paediatric Nephrologist and Clinician Scientist from Bristol University in the United Kingdom. His clinical training has been undertaken in the South West of England, Great Ormond Street hospital in London and the Star ship hospital in Auckland, New Zealand. His research interests are focused on the molecular biology of the glomerulus particularly the roles of insulin and insulin like growth factors on the podocyte. His research uses conditionally immortalised human and murine cells of the glomerulus and podocyte specific transgenic mouse models.

Erika Cretney

Dr Cretney is a Senior Postdoctoral Fellow in the Molecular Immunology division at The Walter and Eliza Hall Institute of Medical Research (WEHI) in Melbourne. She received her PhD in 2004 from The University of Melbourne, having completed her training at The Peter MacCallum Cancer Centre where she worked in the field of tumour immunology. Having spent almost a decade working in the field of cancer research, she joined Dr Stephen Nutt's laboratory at WEHI in 2008 as an NHMRC

Doherty Fellow. Her research has focussed on understanding the role of the transcription factor Blimp-1 in regulatory T cells, which she recently published in Nature Immunology. She has received a number of prestigious awards including a Commendation for the Premier's Award for Medical Research, Victoria Fellowship and L'Oreal Australia For Women in Science Fellowship. Her current research focuses on understanding the role of Blimp-1 in tumour immunity.

Dick de Zeeuw

Dr Dick de Zeeuw earned his MD from the University of Groningen in 1975. His finished his PhD thesis in 1980 on the topic of renal hypertension in the Renal Department of the Groningen University. Trained in clinical and experimental renal research at the Renal Department in Groningen, and trained in Clinical Pharmacology at the University of Dallas (1984-1985). He was Board Certified in 1996 at the University of Groningen. Dr de Zeeuw is currently Professor and Chair of the Department of Clinical Pharmacology with a joint appointment in the Department of Nephrology. He serves (served) on the editorial board of several international journals, including Kidney International, Journal of Hypertension, JRAAS, Current Opinion in Nephrology and Hypertension, Journal of Geriatric Urology and Nephrology, NEPHRON, Clinical Nephrology, NDT Plus. He is Director of the Groningen University Institute for Drug Exploration (GUIDE), member of ISN Council. His research interests include: optimize the current and find new therapy approaches to reduce the progressive loss of cardiovascular and renal function, both in diabetic and non-diabetic renal disease. Answers are found in large cohort studies such as PREVEND (general population) and GIANTT (type 2 diabetes), and in clinical drug trials in which he is involved in the leadership such as RENAAL (AII receptor antagonist), PLANET (statin), TREAT (EPO), VITAL (vitD), SUN (sulodexide), ALTITUDE (renin-inhibition), CANVAS (SGLT2-inhibition), RADAR (atrasentan), BEACON (bardoxolone). Unraveling the reasons for individual therapy resistance and creating a response score to evaluate the total effect of drugs are the topics that he judges to be the important focus for the next decades. He has authored more than 440 international scientific publications and more than 60 book chapters, and received the Lennart Hansson Memorial Lecture Award from the European Society of Hypertension, the International Distinguished Medal from the American National Kidney Foundation, and a special lecture award from the Japanese Society of Nephrology.

Jeremy Duffield

Jeremy Duffield graduated from Oxford University and Edinburgh University, UK. He moved to the USA in 2003 and worked as Assistant Professor of Medicine at Harvard Medical School until 2010. He is now Associate Professor of Medicine and is an established NIH Investigator directing the Laboratory of Inflammation Research at the Institute of Stem Cell & Regenerative Medicine, and Center for Lung Biology at the University of Washington Medical School, Seattle, WA. He is a member of the Nephrology Division and the Kidney Research Institute. His Laboratory is focused on the role of innate immune response cells, monocytes, in injury and repair and on the role of pericytes in microvascular remodeling and fibrosis. Dr. Duffield is a recipient of the Young Investigator Award from the British Renal Association (2001) and Medical Research Society (2002), Senior Fellowship from the Gottschalk Award from the American Society of Nephrology (2006), an ARRA Challenge Grant from the NIH (2009) and the NIDDK Young Investigator/Scholar Award (2010). In 2011 he became an elected member of the American Society for Clinical Investigation. He also serves on scientific study sections at the NIDDK/NHLBI and the Scientific Advisory Boards of Promedior Inc. and Regulus Therapeutics; companies dedicated to the development of anti-fibrotic therapies. He practices Nephrology part-time at University of Washington Medical Center with special interests in Systemic Lupus Erythematosis, Systemic Vasculitis and Pregnancy related kidney disorders.

In his 'spare' time he races bicycles, climbs mountains, skis, plays tennis, grows organic vegetables, looks after children (his own) and fixes things that are broken.

Josephine Forbes

A/Prof Forbes completed her PhD in Paediatric Nephrology in 1999 at the University of Melbourne. In 2012, she became the Group Leader for the Glycation and Diabetes Group at the Mater Medical Research Institute in Brisbane, Australia. She is currently an NHMRC Senior Research Fellow and holds research grants from the NHMRC of Australia and the Juvenile Diabetes Research Foundation (JDRF). She is a regular member of NHMRC grant review panels in addition to grant review panels for the JDRF International. Her work to date has resulted in more than 100 publications in highly ranked journals with a H-index of 34. Her primary research focuses on the biochemical process of advanced glycation and its contribution to diabetes and its vascular complications, in particular nephropathy. She has received awards for her research including the Commonwealth Health Minister's Award for Excellence in medical research in 2010, an NHMRC Achievement Award in 2009, a Young Tall Poppy Award in 2008 and a Young Investigator Award from the International Diabetes Federation in 2002.

Catherine Godson

Catherine Godson is Professor of Molecular Medicine at University College Dublin and Director of UCD Diabetes Complications Research Centre. She obtained her BSc and PhD from UCD and, following postdoctoral fellowships at the University of Geneva and at UC San Diego, joined the faculty of Harvard University. She moved to UCD in 1997. She leads a group of investigators focused on the molecular mechanisms underlying the initiation, progression and potential regression of diabetic kidney disease and the resolution of inflammation. She leads the Ireland component of the GENIE research partnership investigating the Genetics of diabetic nephropathy. This consortium involves investigators from Ireland, US [PI Dr Joel Hirschhorn, Broad Institute] Northern Ireland [PI Professor Peter Maxwell, Queen's University Belfast] and Finland [PI Per-Henrik Groop, Helsinki]. She has authored or co-authored over 100 research papers, review articles, patents and book chapters. The current research focus of her group is the development of agents to exploit endogenous counter regulatory mechanisms to promote regression of fibrosis seen in diabetic nephropathy. Professor Godson's research activities are supported by grants from Science Foundation Ireland, The Wellcome Trust, The Health Research Board and The European Union. She is a board member of the Health Research Board, a member of The European Medical Research Council, has served as a member of the Wellcome Trust's Physiological Sciences Committee and has recently completed a term as Vice President, Innovation and Corporate Partnerships at University College Dublin. She was elected a member of the Royal Irish Academy in 2011.

Assam El-Osta

No biography available at time of print.

Gregory J. Goodall

Professor Goodall is head of the Gene Regulation Laboratory at the Centre for Cancer Biology, SA Pathology, Adelaide, Australia. His group was among the first to construct and use microarrays for microRNA analysis, which in collaboration with the EMT group of Dr. Yeesim Khew-Goodall has lead to the landmark discovery of a microRNA family that controls EMT, with important implications for tumour metastasis. Their report in Nature Cell Biol (2008) is the most highly cited of all papers on microRNAs in cancer. A/Prof Goodall has been a Postdoctoral Fellow of the Roche Institute of Molecular Biology, NJ, Research Fellow at Cornell University Medical School, NY and at the Friedrich Miescher Institute, Basel, Switzerland.

David Harris

David Harris is Associate Dean and Head of Sydney Medical School (Westmead), The University of Sydney.

His major clinical and clinical research interests are the prevention and management of chronic kidney disease (CKD), as well as the management of patients with end stage kidney disease by peritoneal and haemodialysis. Currently his group is investigating novel therapies, including DNA vaccination and regulatory lymphocytes, macrophages and dendritic cells to slow progressive disease. He is Chair of the ISN's Education Committee, Fellowship Program & Publications Committee.

Adam Hill

I am a group leader in the Mark Cowley Lidwill research program in cardiac electrophysiology at the Victor Chang Cardiac Research Institute in Sydney. I received my PhD from the National Heart and Lung Institute at Imperial College, London before moving to Australia in 2004. My research interests are split between two related disciplines, ion channel physiology and computational cardiology. The main focuses of our work are: 1) Using novel approaches such as voltage clamp fluorometry and lj>- value analysis to interrogate structure function relationships in ion channels and 2) Developing computational simulations of cardiac electrical activity at various levels of scale, from cells to whole organs, to investigate the genesis of rhythm disturbances in the heart.

Andrew Hill

Andrew Hill is an ARC Future Fellow (FT3) and Honorary NHMRC Senior Research Fellow in the Department of Biochemistry and Molecular Biology at the University of Melbourne. His laboratory is based at the Bio21 Institute and studies the molecular and cellular biology of neurodegenerative disorders such as Alzheimer's, Parkinson's and prion diseases. Andrew's research team uses in vitro and in vivo models to look at how abnormally folded proteins travel from cell to cell and factors that affect these diseases, including miRNA, with the goal of translating this into the design of novel therapeutics and diagnostics. He has published over 110 publications, edited two books and is a recipient of several awards including the 2005 Edman Award from the ASBMB, a Victorian Young Tall Poppy Award (2006), and the 2010 Merck Medal for Research Excellence from the ASBMB.

Phillip Kantharidis

Dr Phillip Kantharidis heads the Genomics of Diabetes Laboratory at the Baker IDI Heart & Diabetes Institute, Melbourne, Australia. Since graduating from Melbourne University in the early 90's where he studied the molecular biology of RNA viruses, he has worked on molecular projects in cancer and diabetes. In 2002, Dr Kantharidis established his own laboratory at Baker IDI. His research focuses on molecular aspects of gene regulation in diabetic nephropathy, working closely with Professor Mark Cooper in the Diabetic Complications Group at Baker IDI. His recent work has demonstrated that pro-fibrotic factors such as TGF-β1 and CTGF are able to alter the expression of certain microRNAs in a number of different renal cell types. Work from his group has also demonstrated the important role of these miRNAs in the regulation of pro-fibrotic gene expression as well as the regulation of extracellular matrix production and accumulation in the diabetic kidney.

Richard Kitching

Professor Richard Kitching is a nephrologist and physician-scientist at Monash University/Monash Medical Centre, Melbourne, Australia. His research focuses on the pathogenesis of immune renal disease, particularly the involvement of leukocytes in glomerulonephritis. T cells are important in determining the direction of damaging adaptive immune responses, but also can act as effector cells, or regulate immune responses. Prof Kitching has published a number of papers on the role of T cells in the pathogenesis of glomerulonephritis, especially the roles of Th1, Th2 and more recently the Th17 and regulatory T cells subsets. He was chair of the Australian and New Zealand Society of Nephrology (ANZSN) Scientific Program and Education Committee (2007-2011). In 1998 he was awarded the ANZSN Young Investigator Award, has won awards for Best Basic Scientific Research at

the ANZSN Annual Scientific meeting, and in 2007 was awarded the ANZSN TJ Neale Award for Outstanding Contribution to Nephrological Science.

Melissa H Little

Professor Melissa Little is an NHMRC Principal Research Fellow at the Institute for Molecular Bioscience, University of Queensland where she heads the Renal development, disease and regeneration laboratory. Prof Little is known for her work on dissecting the molecular basis of normal kidney development and for using this knowledge to better understand the basis of kidney repair and disease. Over the last decade, she has pioneered studies into potential regenerative therapies in the kidney and it is for this that she is internationally recognized both within the nephrology and stem cell biology communities. Her approaches have ranged from endogenous renal stem cells to directed differentiation of embryonic stem cells. A Royal Society Endeavour Fellow and recipient of the GlaxoSmithKline Research Excellence Award 2005, Gottschalk Medal 2004 and Eisenhower Fellowship 2006, Professor Little was the Chief Scientific Officer of the Australian Stem Cell Centre.

John Mattick

John Mattick is the Director of the Garvan Institute of Medical Research. He did his undergraduate degree at the University of Sydney and his PhD at Monash University. He subsequently worked at Baylor College of Medicine in Houston, the CSIRO Division of Molecular Biology in Sydney, and the University of Queensland, where he was the Foundation Director of the Institute for Molecular Bioscience and the Australian Genome Research Facility. He has also spent periods as a visiting research fellow at the Universities of Cambridge, Oxford, Cologne and Strasbourg.

Professor Mattick's honours include Honorary Fellowship of the Royal College of Pathologists of Australasia, the inaugural Gutenberg Professorship of the University of Strasbourg, the IUBMB Medal, Membership of the European Molecular Biology Organisation, and Fellowship of the Australian Academy of Science. Most recently he received the 2012 Chen Award from the Human Genome Organisation for Distinguished Achievement.

Janos Peti-Peterdi

Dr. Janos Peti-Peterdi, MD, PhD is a Professor of Physiology and Biophysics and Medicine at the University of Southern California. A native of Budapest, Hungary, he received his medical and PhD degrees from the Semmelweis University Medical School. Dr. Peti-Peterdi came to the United States in 1997 to do postdoctoral training in renal physiology at the University of Alabama at Birmingham, Department of Medicine, Division of Nephrology. In 2004, he joined the faculty at the USC Keck School of Medicine, where he received his tenure in 2007. Dr. Peti-Peterdi has an active research program funded by NIH, the American Heart and Diabetes Associations, focused on the (patho)physiological regulation of kidney function, body fluid and electrolyte homeostasis, maintenance of blood pressure, and the renin-angiotensin system. His laboratory utilizes state-of-the-art imaging techniques, including multiphoton fluorescence microscopy to study the function of the intact kidney in health and disease, including diabetes mellitus and hypertension.

Carol Pollock

Professor Carol Pollock trained as a specialist in Renal Medicine, and gained her PhD in renal physiology in 1992. She was appointed to the Professorial Chair of Medicine, University of Sydney, Royal North Shore Hospital in 2000. She is inaugural Chairman of the Board of the Northern Sydney Local Health District, which has oversight of 6 hospitals and the health of 1.7 million people in New South Wales. She is immediate past Chair, and currently serves on the Boards of the NSW Clinical

Excellence Commission and the NSW Agency for Clinical Innovation. She is the Chairman of Research for the Northern Health District and Associate Director of the Kolling Institute of Medical Research. She has published over 180 papers in the scientific literature. She was twice awarded the Australian and New Zealand Society of Nephrology (ANZSN) Young Investigator Award and in 2001 was awarded the highest scientific recognition of the ANZSN, the TJ Neale award. She has previously been a member of the NSW Ministerial Advisory Council for Science and Medical Research and regularly serves on the National Health and Medical Research Council Committees, both as a member and panel Chairman. She has been a member of the Executive Committee of the International Society of Nephrology and is the Scientific Chairman of the World Congress of Nephrology meeting to be held in Hong Kong in 2013. She serves on the Board of several not-for-profit organisations in the Health and Medical Research sector.

Enzo Porrello

Dr Enzo Porrello received my Ph.D. from The University of Melbourne in 2009, where I studied the developmental origins of cardiac hypertrophy under the supervision of Prof. Lea Delbridge and Prof. Walter Thomas. Following my Ph.D., I undertook postdoctoral training at UT Southwestern Medical Center (Dallas, USA) in the laboratory of Dr. Eric Olson, where I was supported by a co-funded overseas postdoctoral fellowship from the National Health and Medical Research Council and National Heart Foundation of Australia. For my postdoctoral research on the mechanisms governing cardiac regenerative capacity in neonatal mice, I was awarded the UT Southwestern Postdoctoral Achievement Award. Supported by fellowships from the NHMRC/NHF and UQ, I relocated to the University of Queensland in 2012 to head the Cardiac Regeneration Group in the School of Biomedical Sciences. My lab at UQ aims to unravel the molecular mechanisms that regulate cardiac regenerative capacity in mammals.

Sharon Ricardo

Associate Professor Sharon Ricardo obtained her Ph.D. from the University of Melbourne and was awarded a US National Kidney Foundation Fellowship to conduct postdoctoral studies at the Pennsylvania State University College of Medicine where she was appointed an Assistant Professor in 1996. In 2000 she returned to Australia as an NHMRC Howard Florey Fellow and commenced studies at Monash University. Sharon is currently an Associate Professor and Group Leader in the Monash Immunology and Stem Cell Laboratories (MISCL). Her work is focused on the development of cellular-based therapies and kidney regeneration to attenuate the progression of kidney disease. Sharon was named the Kidney Health Australia Bootle Scholar (2003-2007). She has previously held a US National Kidney Foundation Fellowship (1994-1996); an American Heart Association Initiator Investigator Fellowship; and received the Judy S. Finkelstein Award from Pennsylvania State University College of Medicine; and the Marion Merrell Dow Excellence in Renal Research Award from the American Physiological Society.

Mike Ryan

After completing his PhD, Mike received an Alexander von Humboldt Fellowship and worked on mitochondrial protein import in the laboratory of Klaus Pfanner in Freiburg, Germany. In 2000, Mike joined La Trobe where he undertakes research into understanding the assembly of membrane protein complexes in mitochondria and defects in disease which cause energy generation defects. He also studies the machinery that controls mitochondrial dynamics. His research has been funded by grants from numerous bodies including the Australian Research Council, National Health and Medical Research Council, and the ARC Centre of Excellence for Coherent X-ray Science where he also leads the Biology program. In 2006, Mike received the Roche Medal from the ASBMB. In 2010 Mike was appointed to Professor and later Head of Department. Mike also serves on the La Trobe Institute for Molecular Science Advisory Board and Executive.

Giovanni Solinas

Giovanni Solinas earned his M.Sc. from University of Milan and his Ph.D. in Biochemistry at the University of Fribourg. He spent one year as post-doctoral research associate in the laboratory of Dr. Abdul G. Dulloo and in 2003 he joined as post-doctoral fellow the laboratory of Prof. Michael Karin at the University of California, San Diego. Since July 2007 Giovanni Solinas is a principal investigator and lecturer at the Department of Medicine of the University of Fribourg where he is leading the Laboratory of Metabolic Stress Biology. His research focuses on the study of the molecular pathways regulating the physiological and pathophysiological response to the metabolic stress caused by obesity, and aging. Dr. Solinas research is supported by the University of Fribourg, the Swiss National Science Foundation, the Roche Research Foundation, the Novartis Foundation, the Swiss society for Endocrinology and Diabetology, and the European Foundation for the study of Diabetes.

Katalin Susztak

Katalin Susztak MD, PhD is currently an Associate Professor of Medicine at the Renal Electrolyte and Hypertension Division of the University of Pennsylvania Perelman School of Medicine. Dr. Susztak earned her doctorate (MD, PhD) degrees at Semmelweis University School Medicine, Budapest, Hungary in 1997 and she completed residency in Internal Medicine and clinical fellowship in nephrology at the Albert Einstein College of Medicine. She completed her post-doctoral work with Dr. Erwin Bottinger, where she initially worked on genomic studies of diabetic kidney disease and also defined the role of podocytes in diabetic nephropathy development. Dr Susztak is a nephrologist and physician-scientist. Work in her laboratory is aimed towards the understanding of renal fibrosis and chronic kidney disease development. She has performed translational research work to identify novel, genetic, genomic and epigenomic biomarkers of chronic renal disease. She has shown that an integrative analysis of epigenetic and genetic settings in diseased cells can provide a rational basis for more accurately modeling the critical biological pathways involved in mediating the progressive phenotype in individual patients. Her laboratory uses genetic approaches and mice as a model organism to test the role of candidate signaling molecules directly in vivo. Specifically, her work highlighted the role of the Notch and Wnt/beta-catenin pathway in chronic kidney disease development, renal epithelial cell homeostasis, renal stem or progenitor cell function and differentiation. Her recent results have revealed the role of embryonic programs in adult disease development causing alterations in renal epithelial cells and causing kidney fibrosis development. These studies have broad impact and clinical significance, since novel pharmaceuticals can be created around these principles. The work in the laboratory of Dr. Susztak is supported by the National Institute of Health, the American Diabetes Association and Juvenile Diabetes Association. Dr. Susztak is an elected member of the American Society of Clinical Investigation. She was the recipient of the 2011 Young Investigator Award of the American Society of Nephrology and American Heart Association for her groundbreaking research on chronic kidney disease development.

Merlin Thomas

Professor Merlin Thomas is a diabetologist, currently working at the Baker IDI Heart and Diabetes Institute in Melbourne, Australia. His research has been widely published with two hundred papers in peer-reviewed journals including Diabetes, Diabetes Care, The Lancet, and Circulation Research. His ongoing research focuses on understanding the mechanisms of vascular damage in diabetes, with a particular focus on advanced glycation and its interaction with other pathogenic pathways, including metabolic memory and renin angiotensin system.

David Thorburn

Professor David Thorburn heads the Mitochondrial Research Group at Murdoch Childrens Research Institute, Royal Children's Hospital, Melbourne. He is an NHMRC Principal Research Fellow and past-President of the Human Genetics Society of Australasia. His research focuses on inherited metabolic disorders, particularly those affecting mitochondrial energy generation, which comprise more than 120 monogenic disorders. Through collaboration with Vamsi Mootha at the Broad Institute of MIT and

Harvard, he recently conducted the MitoExome study. This involved “Next Generation” DNA sequencing of 1034 genes encoding known mitochondrial proteins in patients with mitochondrial disease and has led to the identification of a number of novel “disease” genes. His lab has also developed transgenic mice with different mitochondrial Complex I defects, which are being used to elucidate pathogenic mechanisms and to trial therapeutic strategies.

Rhian M Touyz

Dr Rhian Touyz, MBBCh, MSc.(Med), PhD, is a clinician-scientist focusing on research related to molecular, cellular and vascular mechanisms of experimental and clinical hypertension. She is the Director of the Institute of Cardiovascular and Medical Sciences, BHF Glasgow Cardiovascular Research Centre, University of Glasgow. She was the Canada Research Chair in Hypertension and has received numerous awards in recognition of her contributions to hypertension research, including Young Investigator Awards from the American and Canadian Societies of Hypertension, the Dahl Award from the American Heart Association and 2012 Berne Award from the American Physiological Society. She is the current Chair of the Council for High Blood Pressure Research of the American Heart Association, the Editor-in-Chief of Clinical Science, Deputy Editor of Hypertension, and Associate Editor of Pharmacological Reviews. Dr Touyz has published over 280 original papers and reviews. Her areas of study include clinical and experimental hypertension, signal transduction, oxidative stress, ion transport, cell biology, vascular biology, adipose tissue biology and diabetes.

Volker Vallon

Dr. Vallon is Professor of Medicine and Pharmacology at the University of California San Diego (UCSD) and a principal investigator at the VA San Diego Healthcare System. He received his M.D. from the University of Tübingen, Germany, and research training at the University of Tübingen, UCSD, and the NIH. His group has characterized the roles played by a variety of channels, transporters, receptors and signalling molecules in the physiology, pathophysiology, and pharmacology of the kidney. He aims to integrate aspects of vascular, glomerular and tubular function to gain a more complete understanding of the kidney. Dr. Vallon uses gene-targeted mouse models to dissect contributions of specific genes (including in vivo renal micropuncture at the single nephron level). With regard to the diabetic kidney, his work is focussing on the primary role of the tubular system. His research is funded by the NIH, AHA, and pharmaceutical industry.