

## CANBERRA HOSPITAL

### Cancer Research Unit

#### STAFF

A/Prof Hilary Warren, NHMRC Senior Research Fellow (2006) and ANU Senior Fellow (2006, 2007), John Curtin School of Medical Research; Visiting Fellow, ANU Medical School; Visiting Research Fellow, The Canberra Hospital

Dr Ron Jackson, (part time 2007)

Mr Joseph Ng, (January 2007 to August 2007)

Dr Neli Azmanova, (August 2007 to December 2007)

Ms Yvonne Gonzalez, (from July 2008)

#### STUDENTS

Mr Dean Yee PhD student at the John Curtin School of Medical Research, ANU.

A/Prof Hilary Warren as Supervisor (2007) and Co-supervisor (2008) with Dr Mark Hulett (Latrobe University)

Mr Kenny Janes, Honours student 2007 supervised by A/Prof Hilary Warren

#### COLLABORATIVE ASSOCIATES

Professor Chris Parish, Division of Immunology and Genetics, John Curtin School of Medical Research, ANU

Dr Lauren Wilson, Infectious Diseases Unit, The Canberra Hospital (to August, 2007) and Visiting Fellow, John Curtin School of Medical Research, ANU (to August 2008)

Dr Dipti Talaulikar, Department of Haematology, ACT Pathology, and ANU Medical School

#### RESEARCH PROJECTS

The research projects in the Cancer Research Unit are focused on the biology of human Natural Killer cells. NK cells are part of the innate immune system and are essential in the early stages of viral infection prior to establishment of antigen specific immune

responses. NK cells also kill cancer cells by detecting changes in the level of class I MHC antigens and expression of stress induced molecules. NK cells mediate antibody dependent cell cytotoxicity and are one of the mechanisms by which therapeutic monoclonal antibodies are effective in treating various cancers. Understanding processes that lead to NK cell expansion and migration are relevant to the use of NK cells in therapy of cancer.

*Receptors and ligands regulating human natural killer cell (NK) proliferation. HS Warren*

*Mechanisms underlying human NK cell migration. D Yee, PhD project*

*Selective NK cell engraftment in NOD/SCID mice. K Janes, Honours project*

*The interaction between NK cells and cells infected with human coronavirus 229E. HS Warren and L Wilson*

*Lymphocyte populations in diffuse large B-cell (and other aggressive) non-Hodgkin's lymphoma. D Talaulikar, HS Warren, C Hawkins, B Shadbolt, M McNiven*

#### FUNDING

2007

National Health and Medical Research Council, Senior Research Fellowship, A/Prof HS Warren, \$116,750

National Health and Medical Research Council, Equipment grant, Dr D Linares, Prof C Nolan, Dr N Teoh, Prof G Farrell, A/Prof H. Warren, *MicroBeta Microplate scintillation/luminescence counter*, \$54,613

The Canberra Hospital Private Practice Fund, A/Prof HS Warren and Dr L Wilson, *The interaction between Natural Killer cells and cells infected with human coronavirus 229E.* \$84,995

2008

The Canberra Hospital Private Practice Fund, Dr D Talaulikar, A/Prof HS Warren, Dr C Hawkins, Dr B. Shadbolt, Ms M McNiven, *Lymphocyte populations in diffuse large B-cell (and other aggressive) non-Hodgkin's lymphoma* \$28,882

## PUBLICATIONS

Quah BJC, Warren HS, Parish CR: *Monitoring lymphocyte proliferation in vitro and in vivo with the intracellular fluorescent dye carboxyfluorescein diacetate succinimidyl ester*. Nature Protocols 2007: 2: 2049–2056

## PRESENTATIONS/ABSTRACTS

*Analysis of Heparanase Expression in Human Natural Killer Cells*. Yee DY, Hornby JR, Hulett MD and Warren HS. ASMR Young Investigators Forum, Canberra. June 2007

*Proliferating human NK cells show different patterns of expression of activation-induced receptors depending on the mode of stimulation*. Warren, HS. Australasian Society for Immunology, Sydney, December, 2007

*Analysis of Heparanase Expression in Human Natural Killer (NK) Cells*. Yee DY, Hulett MD and Warren HS. 11th Meeting of the Society for Natural Immunity NK2008, Fremantle, WA, October, 2008

*Analysis of Heparanase Expression in Human Natural Killer (NK) Cells*. Yee DY, Hulett MD and Warren HS. Australasian Society for Immunology 38th Annual Scientific Meeting, Canberra, December, 2008

## AWARDS

Yee DY. ASMR Young Investigators Forum, Canberra. June 2007. ASMR Student Member Presentation Prize

## Other activities:

A/Prof H Warren

Editorial Board Member:  
*Immunology and Cell Biology*



Yvonne Gonzales, Michelle McNiven, Dr Hilary Warren, Dr Dipti Talaulikar, Dean Yee

## CANBERRA HOSPITAL

### Cardiology Department

#### STAFF

Dr Ahmad Farshid, Interventional Cardiologist

Dr Ian Jeffery, Staff Specialist

Dr Ren Tan, Staff Specialist

Dr Darryl McGill, Staff Specialist

Dr David Coles, Staff Specialist

Dr Simon O'Connor, Visiting Cardiologist

Dr Charles Itty, Cardiology Research Fellow

Dr Ben Jacobson, Cardiology Registrar

Dr Muayad Alasady, Cardiology Registrar

Dr Daniel Sathianathan, Cardiology Registrar

RNs, Cardiology Research

Pearle Taverner, Study Co-ordinator

Paul Marley, PCI Database Co-ordinator

Russell Appeldorff, Study Co-ordinator

#### RESEARCH PROJECTS

2007–2009

*Clinical and Angiographic Predictors of Coronary Artery Disease Progression.*

Dr Ahmad Farshid and Dr Daniel Sathianathan.

*Predictative Value of Echocardiographic Parameters on cardiovascular Outcomes in Patients with stage 4–5 chronic renal disease (Dr Ahmad Farshid, Dr M Alasady, Dr B Jacobson, and Dr G Talaulikar, Renal Physician 2007–2009)*

*Reperfusion Arrhythmias in ST Elevation Myocardial Infarction.* Dr Ren Tan and Dr Charles Itty

Clinical Trials 2005 to 2009

**OAT TRIAL.** A clinical trial sponsored by the National Heart, Lung, and Blood Institute of the National Institutes of Health to test the hypothesis that opening occluded coronary arteries 3–28 days after myocardial infarction

with EF<50% or proximal coronary occlusion will reduce the occurrence of death, class IV congestive heart failure requiring hospitalisation and recurrent MI by 25% during a 3 year follow-up. This centre has enrolled 3 patients. The study commenced in August 2001 and is still ongoing in the follow-up stage. The results have been published; *N Engl J Med.* 2006 Dec 7;355(23):2395–407

**ACUITY STUDY.** A randomised comparison of Bivalirudin versus Clexane in patients undergoing early invasive management for acute coronary syndromes without ST-segment elevation sponsored by the Medicines Company. This study commenced in February 2004 and completed in Jan 2007. This centre has recruited 20 patients. Published results; *Lancet.* 2007 Mar 17;369(9565):907–19

**APEX STUDY.** A multicenter, randomised, double-blind, parallel-group, placebo-controlled study of Pexelizumab in patients with Acute Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention. Procter and Gamble Pharmaceuticals sponsor this study. This study commenced in September 2004 and completed in May 2007. There were 14 patients recruited in this study. Published results: *JAMA.* 2007 Jan 3;297(1):43–51

**HAT STUDY.** Home Automatic External Defibrillator (AED) Trial. The aim of the study is that a simply employed strategy of providing an AED for home use will improve survival beyond that achieved from the typical lay response to sudden cardiac arrest. Study population will involve select post-myocardial infarction patients at risk for sudden cardiac arrest (anterior myocardial infarction). This study is sponsored by Seattle Institute for Cardiac Research. This centre has recruited 39 patients. The study commenced in December 2002 and was completed in November 2007. Published results: *N Engl J Med.* 2008 Apr 24;358(17):1793–804

**ONTARGET STUDY.** A large, simple, randomised, double blind, multicentre, international trial comparing the effects of Telmisartan, Ramipril and their combination on outcomes in patients at high risk for cardiovascular events. 50 patients recruited. Completed March 2008. Published results: *N Engl J Med.* 2008 Apr 10;358(15):1547–59

**TRANSCEND STUDY.** A large, simple, randomised, double-blind, multicentre, international trial comparing the effects of Telmisartan with placebo on outcomes in patients at high risk for cardiovascular events and intolerant of ACE1. 5 patients recruited. These two studies commenced in October 2001 and completed in June 2008. Published results: *Lancet.* 2008 Sep 27;372(9644):1174–83

**ACACIA Registry.** To identify the current management of Acute Coronary Syndromes Australia-wide at admission to hospital, during the in-patient stay and at discharge and 6 and 12 months post discharge. We enrolled 64 patients from Nov 2005 till May 2006. The study was published in 2007 in the *Internal Medicine Journal*, Volume 37, p741–748

**I-PRESERVE STUDY.** Irbesartan in Heart Failure with Preserved Systolic Function. The I-Preserve study is an evaluation of the effect of the angiotensin II receptor blocker, irbesartan versus placebo in reducing mortality and cardiovascular morbidity in subjects with heart failure with preserved systolic function. The study commenced in July 2002 and this centre has recruited 2 patients and the study was completed in December 2008. Sanofi-Aventis sponsors Published results: *N Engl J Med.* 2008 Dec 4;359(23):2456–67

**ORIGIN STUDY.** A Multicenter, International, Randomized, 2x2 Factorial Design Study to Evaluate the Effects of Insulin Glargine Versus Standard Care, and of Omega-3 Fatty Acids Versus Placebo, in Reducing Cardiovascular Morbidity and Mortality in High Risk People With Impaired Fasting Glucose, Impaired Glucose Tolerance of Early Type 2 Diabetes Mellitus. Aventis Pharma sponsored this study. The study commenced in January 2004 and is still ongoing. There are 4 patients in the follow-up phase.

**Champion Study.** A Clinical Trial Comparing Cangrelor to Clopidigrel in Subjects who Require Percutaneous Coronary Intervention. It commenced in July 2006 and is ongoing. It has currently 14 patients enrolled. Follow-up phase will commence in March 2009.

**ROCKET STUDY.** A Study to demonstrate that Rivaroxiban is non-inferior to warfarin in the prevention of the composite endpoint of stroke and non-CNS systemic embolism in subjects with non-valvular atrial fibrillation. It commenced in June 2007 and is still ongoing. It has currently has 3 patients enrolled.

**TRACER STUDY.** A Study designed to address the effects of SCH 530348 when administered in addition to the standard of care for a minimum of 1 year in subjects with documented atherosclerotic disease and symptoms of acute coronary syndrome. It has just commenced in July, 2008, currently 6 patients.

**FREEDOM STUDY.** A Study to evaluate whether percutaneous coronary intervention (PCI) with drug-eluting stenting PCI/DES is more or less effective than the existing standard of care, coronary artery bypass surgery (CABG). It commenced in August 2006, and it is still ongoing. There are 9 patients enrolled.

**DAL-OUTCOMES.** A Study to evaluate the effects of Dalcitrapib on cardiovascular risk in stable CHD patients with a recent ACS. Recruiting phase 12 patients enrolled.

**ICE Study.** International collaboration on Endocarditis Prospective Cohort Study of Infective endocarditis, awaiting final ethics approval.

**ANTS Registry.** Registry collecting data stent thrombosis: Australian Network for Thrombosis in Stents-ongoing.

**STABILITY TRIAL.** A clinical Outcomes Study of Darapladib versus Placebo in patients with Chronic CHD to compare the incidence of Major Adverse Cardiovascular Events. Awaiting study medication arrival.

**TRIDENT TRIAL.** A Study to assess the effects of Intravenous BG9928 on body weight in patients with acute decompensated heart failure and renal insufficiency. Commenced screening for patients 10 March 2009.

Atmosphere. A study to evaluate the efficacy and safety of both aliskiren monotherapy and aliskiren/enalapril combination therapy compared to enalapril monotherapy, on morbidity and mortality in patients with chronic hear failure. Awaiting ethics approval.

Research projects conducted in Cardiology Department 2007 to 2009

6 Month Post Ptca Follow-Up. Commenced In January 2001 and is ongoing. P Marley RN, P Taverner RN, Dr A Farshid

Xience Stent Project: Safety and Efficacy of Xience V Drug eluting Stent, P Marley RN, Dr Ahmad Farshid

Prevention of Contrast Induced Nephropathy Using rotational coronary Angiography, Dr M Alasady, Dr A Farshid, Craig Lawlor RN. Infective Endocarditis, Dr M Alasady, Dr D Sathianathan, Dr A Farshid, Dr Ian Jeffery, Dr McGill, Dr S O'Connor, Dr D Coles, Dr R Tan

## PRESENTATIONS/ABSTRACTS

World Congress of Cardiology 2–6 September 2006 Barcelona:

ST Resolution in Elderly Patients undergoing Primary PCI for STEMI (oral presentation), RPTan, A Yeung, A Farshid, D Coles, D McGill, S O'Connor, I Jeffery

Comparison of ST Resolution in Primary PCI for Anterior vs Inferior STEMI, RP Tan, A Yeung, A Farshid, D Coles, D McGill, S O'Connor, I Jeffery

Scientific abstracts presented at Cardiac Society of Australia and New Zealand 2007:

*Prevention of Contrast Induced Nephropathy Using rotational coronary Angiography.* Dr M Alasady, Dr A Farshid, Craig Lawlor RN

*Infective Endocarditis in the Elderly.* Dr M Alasady, Dr D Sathianathan, Dr A Farshid, Dr Ian Jeffery, Dr McGill, Dr S O'Connor, Dr D Coles, Dr R Tan

*Clinical Re-Stenosis. Our experience at The Canberra Hospital,* Dr C.Allada, Dr Coles, Dr A Farshid, Dr I Jeffery, Dr D McGill, Dr S O'Connor, Dr R Tan

*Infective Endocarditis: The Canberra Hospital Experience 2000–2006,* Dr M. Alasady, Dr D Sathianathan, Dr A Farshid, Dr Ian Jeffery, Dr McGill, Dr S O'Connor, Dr D Coles, Dr R Tan

Scientific abstracts presented at Cardiac Society of Australia and New Zealand 2008: Incidence of contrast Induced Nephropathy in Patients with Pre-Existing Renal Dysfunction. Craig Lawlor RN, Dr Ahmad Farshid, Jenny Coutts RN

Clinical and Lifestyle Predictors of Progression of Angiographic Coronary Artery Disease. Dr D Sathianathan, Dr A Farshid, Dr C Itty, L Divorty RN, M McAlpin RN, J Coutts RN

Predictors and Outcomes of Stent Thrombosis in 'Real-World' patients in Australia. Dr A Farshid, Dr C Itty, Dr D Coles, Dr I Jeffery, Dr d McGill, Dr S O'Connor, Dr R Tan

## FUNDING

Clinical Trials: Pharmaceutical Sponsors; NHLBI(National Health Lung & Blood Institute Cardiology Department Special Purpose Account. Private Practice Fund, The Canberra Hospital

## PUBLICATIONS

*A Novel ultra-thin bare metal stent (BMS): results from a worldwide registry.* Dr A Farshid and the Principal investigators from the Matsuri Trial

Itty CT, Farshid A, Talaulikar G. *Spontaneous Coronary Artery Dissection in a Woman with Polycystic Kidney Disease.* Am J Kidney Dis. 2009 Mar;53(3):51821. Epub 2008 Nov 6

# CANBERRA HOSPITAL

## Clinical Trials Unit

### STAFF

Dr Walter Abhayaratna, Director Clinical Trials Unit, Staff Specialist in Cardiology, Senior Lecturer in Medicine, Australian National University

Ms Katherine Johnson,  
Manager Clinical Trials Unit

Ms Christine Brown,  
Senior Cardiac Research Sonographer

Ms Anthea Oon, Clinical Trials Coordinator

Mr David Larkin, Clinical Trials Coordinator

Ms Karen Gravenmaker,  
Clinical Trials Coordinator

Ms Kate Hayes, Research Coordinator

Mr Luke Cartwright, Trainee Cardiac  
Sonographer

Ms Jo Horn, Clinical Trials Coordinator

Ms Marilyn Hines, Clinical Trials Coordinator

Ms Maree White, (Nursing) Clinical Trials  
Coordinator

Ms Wendy Frylink, Administrative Service  
Officer

Ms Tarryn Albrecht, Administrative Service  
Officer

Ms Catherine Knight-Agarwal, Dietician

Ms Mari Eronen, Dietician

Mr Kym Smith, Cardiac Sonographer



Tegan Meredith, Francesca Rochford, Gillian Fox, Karen Gravenmaker, Tarryn Albrecht, Christine Brown, Dr Walter Abhayaratna, Luke Cartwright, Katherine Johnson, David Larkin, Janine Vickers, Kate Hayes, Anthea Oon, (Absent: Janine Lourensz)

## COLLABORATIVE ASSOCIATES

Associate Professor Christopher Nolan,  
Senior Endocrinologist, ANU Medical School

Associate Professor Dennis Wilson,  
Endocrinologist, Clinical Director of  
Endocrinology/Consultant, Principal  
Investigator

Associate Professor Christian J Lueck. Head,  
Department of Neurology, Canberra Hospital,  
ANU Medical School

Associate Professor Marc Budge, Director,  
Department Aged Care and Rehabilitation  
Services, Canberra Hospital, ANU Medical  
School

Dr Wichat Srikusalunukul, Department of Aged  
Care and Rehabilitation Services, ACT Health

Associate Professor Mark Hurwitz, Director  
Thoracic Medicine, Canberra Hospital, ANU  
Medical School

Professor Francis J Bowden, MBBS Director  
Canberra Sexual Health Centre, Staff  
Specialist in Infectious Diseases, Professor of  
Medicine, Australian National University

Dr Marian Currie, Research Program Manager  
AUIM Research Manager, Academic Unit of  
Internal Medicine, Canberra Hospital

Dr Doug Taupin, Gastroenterology Unit,  
Canberra Hospital, Visiting Fellow ANU Medical  
School

Prof Richard Telford, ANU College of Medicine,  
Biology & Environment

Dr Steven Yew, Renal Medicine Department,  
Canberra Hospital

Dr Girish Talaulikar, Renal Medicine  
Department, Canberra Hospital

A/Prof Paul Pavli, Gastroenterology Unit,  
Canberra Hospital

Dr Jay Govind, Occupational and Pain Medicine

Dr Satoru Sakuragi, Okayama University,  
Japan, Postdoctoral Fellowship

## RESEARCH PROJECTS

### A5351022

*Investigators:* A/Prof Chris Nolan  
1 year, randomised, double blind, placebo  
controlled, Phase 3 study to evaluate the  
efficacy and safety of CP-945,598 in the  
treatment of overweight, oral agent-treated  
subjects with Type 2 diabetes mellitus.

### Abadacept UC

*Investigators:* A/Prof Paul Pavli  
Phase II Multi-centre Randomized Placebo  
Controlled Study to evaluate the Clinical  
Efficacy and Safety of Induction Maintenance  
Therapy with Abatacept in Subjects with Active  
Ulcerative Colitis who have had an Inadequate  
Response and/or Intolerance to Medical  
Therapy.

### Abadacept CD

*Investigators:* A/Prof Paul Pavli  
Phase III Multi-centre Randomized Placebo  
Controlled Study to evaluate the Clinical  
Efficacy and Safety of Induction Maintenance  
Therapy with Abatacept in Subjects with Active  
Crohn's Disease who have had an Inadequate  
Clinical Response and/or Intolerance to  
Medical Therapy.

### Acute Pancreatitis

*Investigators:* Dr Doug Taupin  
Randomised, controlled trial of serum lipase  
versus clinical assessment in the  
establishment of oral refeeding in Acute  
Pancreatitis.

### Advance

*Investigators:* A/Prof Chris Nolan  
Factorial, randomised trial of blood pressure  
lowering with a fixed low-dose perindopril-  
indapamide combination and intensive  
glucose control with a modified-release  
gliclazide-based regimen for the prevention of  
vascular disease among high risk individuals  
with Type 2 diabetes.

### Asphelia

*Investigators:* A/Prof Paul Pavli  
Single Dose-Escalation Randomized, Double-  
Blind Placebo-Controlled, Trial of ASP1002  
(Trichuris suis Ova[TSO]) Therapy in Patients  
with Mild to Moderately Active Crohn's  
Disease.

**ASPREE/BIOBANK**

*Investigators:* Dr Walter Abhayaratna, A/Prof Marc Budge

A double-blind, randomized, placebo-controlled primary prevention trial designed to assess whether daily active treatment of 100mg enteric-coated aspirin will prolong life, free of dementia or significant persistent physical disability, in healthy participants aged 70 years and above.

**ENVIS-ion**

*Investigators:* A/Prof Marc Budge

Aspirin for the prevention of cognitive decline in the Elderly: a Neuro-Vascular Imaging Substudy from ASPREE.

**BC20779**

*Investigators:* A/Prof Chris Nolan & A/Prof Dennis Wilson

Multicenter, double-blind, randomized, placebo-controlled, dose ranging phase 2 study to investigate efficacy, safety, tolerability and pharmacokinetics of the DPP-IV inhibitor RO4876904 in patients with type 2 diabetes.

**Begin**

*Investigators:* A/Prof Christian Lueck

Betaferon treatment and Exercise Gathering in early Multiple Sclerosis.

**Canberra Heart Study**

*Investigators:* Dr Walter Abhayaratna

Population based study of 60–90 yr olds. Characterizing the relationship between cardiovascular risk markers and clinical cardiovascular outcomes.

*Primary aim:* Initiated in 2002, this cohort study will re-assess over 1300 subjects.

**CHIPS**

*Oral ivermectin versus topical treatment for pediculosis capitis (head lice) in primary school students: a pilot study.*

*Investigators:* Professor Francis J Bowden, Associate Professor Graham Reynolds, Dr Marian J Currie and Professor Nicholas Glasgow.

*Primary aim:* To measure the feasibility of administering oral ivermectin in the treatment of head lice in a cohort of primary school students in the Australian Capital Territory (ACT).

**CogniMS**

*Investigators:* A/Prof Christian Lueck

Multi-centre, multinational observational study.

*Primary aim:* Observes cognition in relapsing-remitting MS patients to predict course of MS and testing Betaferon as a treatment.



Echo Research Group. Tegan Meredith, Christine Brown, Luke Cartwright, Dr Walter Abhayaratna, Janine Vickers, Kate Hayes



*CSL Flu*

*Investigators:* Dr Walter Abhayaratna  
A Phase IV, Randomized, Observer-Blind, Placebo-Controlled, Multi-Centre Study to Evaluate the Efficacy, Safety and Tolerability of CSL Limited's Influenza Virus Vaccine in Adults aged >18 to < 65 years.

*Direct*

*Investigators:* A/Prof Dennis Wilson

3 Protocols in 1 trial:

1. (SH-AHM-0045/EC556) Effects of candesartan cilexetil (candesartan) on diabetic retinopathy in Type 1 diabetic patients without retinopathy.
2. (SH-AHM-0046/EC557) Effects of candesartan cilexetil (candesartan) on diabetic retinopathy in Type 1 diabetic patients with retinopathy.
3. (SH-AHM-0047/EC558) Effects of candesartan cilexetil (candesartan) on diabetic retinopathy in Type 2 diabetic patients with retinopathy.

*HSV*

*Investigators:* A/Prof Frank Bowden  
Double-blind, randomised, controlled study to evaluate the immunogenicity and safety of herpes simplex candidate vaccine (gD2-AS04) in healthy HSV seronegative and seropositive female participants aged 10–17 years.

*LOOK*

Lifestyle of Our Kids Study

*Investigators:* Dr Walter Abhayaratna, Dr Richard Telford

Population based study assessing the relationship between lifestyle factors and health of prepubescent children. Approximately 650 children seen in 2007.

*Navigator*

*Investigators:* A/Prof Chris Nolan  
Multinational, randomised, double-blind, placebo-controlled, forced-titration, 2x2 factorial design study of the efficacy and safety of long-term administration of long-term administration of nateglinide and valsartan in the prevention of diabetes and cardiovascular outcomes in subjects with impaired glucose tolerance (IGT).

*Options*

*Investigators:* A/Prof Chris Nolan & A/Pros Dennis Wilson  
Phase IIb, randomised, double-blind, placebo-controlled study to assess the efficacy, safety and tolerability of 24 weeks treatment with different doses of AOD9604 tablets on weight loss in obese adults.



Clinical Trials Unit Reception

*PATH Through Life: Mid-Life Cardiovascular Substudy*

*Investigators:* Dr Walter Abhayaratna  
Characterizing the Interrelationships between Central and Brachial Blood Pressure, Arterial Stiffness, Left Ventricular Function and Cognition.

*Perform*

*Investigators:* A/Prof Christian Lueck  
Prevention of cerebrovascular and cardiovascular events of ischaemic origin with terutroban in patients with a history of ischaemic stroke or transient ischaemic attack. An international, randomised, double-blind, two parallel group study comparing terutroban 30mg once daily versus aspirin 100mg once daily administered orally for a 3 year mean duration (event driven trial).

*Reassure*

*Investigators:* A/Prof Chris Nolan & A/Prof Dennis Wilson  
A randomised, double blind, placebo controlled, parallel-group, fixed dose, rimonabant (20mg), multicentre study on HbA1c in overweight or obese patients with type 2 diabetes not adequately controlled on two oral antidiabetic agents.

*Investigator:* Dr Jay Govind

A randomised, controlled trial, to evaluate the effectiveness of transforminal and other injections with five groups to test three therapeutic agents (steroids, local anaesthetic, normal saline) in the treatment of Sciatica.

*Voluntary Kidney Donor Study*

*Investigators:* Dr Stephen Yew, Dr Girish Talaulikar & Dr Walter Abhayaratna

A study to evaluate the cardiovascular risk in voluntary kidney donors with post- donation glomerular filtration rate (eGFR) < 60ml/min compared to age and sex matched controls (with eGFR of > 60ml/min) and to persons with stage 3 chronic kidney disease (eGFR 30-60 ml/min).

*Tiotropium*

*Investigators:* Dr Mark Hurwitz  
Randomised, double-blind, placebo-controlled, parallel-group, efficacy and safety comparison of one-year treatment of two doses (5mcg and 10mcg) of tiotropium inhalation solution delivered by the Respimat Device in patients with Chronic Obstructive Pulmonary Disease (COPD).

*UCB 085*

*Investigators:* Dr Paul Pavli  
A phase IIIb, multinational, randomized, double-blind, placebo-controlled trial to assess the efficacy and safety of certolizumab pegol, a pegylated Fab' fragment of a humanized anti-TNF-alpha monoclonal antibody, administered subcutaneously at week 0, 2 and 4 in subjects with moderately to severely active Crohn's disease.

*UCB 088 (following study from UCB 085)*

*Investigators:* Dr Paul Pavli  
A phase IIIb, multinational, open-label, follow-on trial to C87085 designed to assess the long-term safety of certolizumab pegol, a pegylated Fab' fragment of a humanized anti-TNF-alpha monoclonal antibody, administered at 0, 2 and 4, and then every 4 weeks thereafter, in subjects with moderately to severely active Crohn's disease who have participated in study C87085.

# CANBERRA HOSPITAL

## Endocrinology

### STAFF

A/Professor JD Wilson, Clinical Director

A/Professor Chris Nolan, Senior Specialist  
(see separate report)

Dr Robert Schmidli, Part Time Senior Specialist

Dr Sumathy Perampalam, Part Time Senior Specialist

Mrs Juliet Langridge, Part Time Research RN

Ms Elaine Slater, Part Time Research RN

### COLLABORATIVE ASSOCIATES

Dr Charmaine Simeonovic,  
Transplantation Immunologist, ANU

A/Professor Peter E Hickman, Director of  
Chemical Pathology, ACT Pathology

### RESEARCH PROJECTS

*Heparanase proteins in type 1 diabetes*  
(A/Prof JD Wilson, Dr C Simeonovic, Ms Catherine Priest, ANU MBBS student)

Type 1 diabetes is an autoimmune disease in which autoreactive T lymphocytes and other insulinitis leukocytes infiltrate the islets of Langerhans and destroy the insulin-producing beta cells. For extravasation and invasion into tissues immune cells deploy a range of degradative enzymes such as heparanase and matrix metalloproteinases to migrate through the subendothelial basement membrane. Previous studies in mice have shown that islets are especially enriched in heparan sulphate, the substrate for heparanase, and that heparanase plays a critical role in the autoimmune destruction of islet beta cells and the development of type 1 diabetes.

A flow cytometry assay was developed for the quantitative assessment of intracellular heparanase protein in human peripheral blood lymphocytes. Using this assay no significant differences were found between levels in

normal controls, type 1 patients at onset or after several years of disease. Qualitative and quantitative differences in active heparanase in these cells will now be examined using western blotting analysis.

*Vitamin D Deficiency in Pregnancy – a pilot study* (Dr S Perampalam, A/Prof C Nolan, A/Prof P Hickman)

The aims of this study were to determine the prevalence of vitamin D deficiency in pregnant women attending antenatal clinics at The Canberra Hospital and to evaluate the effectiveness of vitamin D supplementation in pregnancy using the current guidelines. The last aim was to determine the effect of maternal vitamin D status on infants' birth weight, length and head circumference. The Canberra Hospital Endocrinology team and an ANU medical student are engaged in this project. The project is underway and we have successfully recruited about 50 participants.

*Clinical Trials* (A/Prof JD Wilson, Ms Juliet Langridge, Ms Elaine Slater)

Increasing interest in the past few years in different means for treating patients with type 2 diabetes has led to trials with agents such as Liraglutide which increases the insulin response to meals. There have also been trials of agents such as Sitagliptin to enhance the action of naturally occurring hormones which have this action.

*Liraglutide Effect and Action in Diabetes (LEAD-2)*

Effect on glycaemic control after once daily administration of Liraglutide in combination with metformin versus metformin and glimepiride combination therapy in subjects with type 2 diabetes.

Patients were entered into a six month double-blind double-dummy randomised active control parallel-group multicentre multinational trial with an 18 months trial extension period. This was one of a group of trials with this agent.

These have been successfully completed and the agent is being considered for listing for the treatment of type 2 diabetic patients in the USA and Europe.

*Co-administration of Sitagliptin and metformin in patients with type 2 diabetes.*

Patients with inadequate glycaemic control were recruited to a one year multicentre, randomised, double-blind factorial study with a one year extension. This was one of a suite of studies with this agent which have been completed and Sitagliptin is now approved for prescription to patients with type 2 diabetes in Australia. We are currently taking part in a follow up related study using Sitagliptin in a combined tablet with pioglitazone. This is a phase 1, double-blind, randomised, placebo controlled clinical trial to study the safety, efficacy and mechanism of action of Sitagliptin and pioglitazone in patients with type 2 diabetes mellitus who have inadequate glycaemic control on diet and exercise.

*L2T3 and Basal Plus*

There is continuing interest in the optimal way to use the available insulin preparations. Patients were entered into a multicentre, multinational, randomised open-label comparative parallel-group study of target glycaemic control and the incidence of documented symptomatic hypoglycaemia in insulin naïve subjects with type 2 diabetes failing on oral hypoglycaemic agents and treated with either Lantus or Levemir insulin (L2T3). This trial is completed and another one assessing the efficacy and safety of a basal plus regimen with insulin glargine and insulin glulisine in type 2 diabetes in everyday practice is recruiting (Basal Plus).

*Inhaled pre-prandial human insulin with the AERx iDMS plus glimepiride versus rosiglitazone plus glimepiride in type 2 diabetes.*

This was a 26-week open-label, multicentre, randomised, parallel trial to investigate safety and efficacy. While a lot of effort went into this and related trials of inhaled insulin in type 1 diabetes, the AERx device was eventually withdrawn worldwide as commercially non-viable.

*Satavaptan*

One trial in hyponatraemia was investigated. This was a double-blind, randomised, placebo controlled, multicentre study evaluating the efficacy and safety of two doses of satavaptan versus placebo in patients with dilutional hyponatraemia due to the syndrome of inappropriate anti-diuretic hormone secretion. Endocrinology had increasing concerns about this agent which is an ADH receptor blocker. Subsequently the trial was abandoned.

Involvement in three diabetes trials continued in association with the Clinical Trials Unit. The DREAM (Diabetes reduction assessment with ramipril and rosiglitazone medication) trial was completed and showed very little after the drugs were washed out. The DIRECT trial (Diabetic retinopathy candesartan trial) was also completed and showed some benefit in terms of prevention of retinopathy in type 1 diabetes but little effect on its progression. The NAVIGATOR (Nateglinide and Valsartan in impaired glucose tolerance outcomes research trial) trial continues into 2009.

## FUNDING

### 2007

\$50,000 The Canberra Hospital Private Practice Fund. A/Prof J Dennis Wilson, Prof Chris Parish and Dr Charmaine Simeonovic *Heparanase as a target for Type 1 Diabetes treatment.*

### 2008

\$13,000 (Approximately). The Canberra Hospital Private Practice Fund. Dr Sumathy Perampalam, A/Prof Chris Nolan and A/Prof Peter Hickman. *Vitamin D Deficiency in Pregnancy – a pilot study.*

## PUBLICATIONS

Transient transmission of porcine endogenous retrovirus (PERV) to fetal lambs after pig islet tissue xenotransplantation, Popp, SK; Mann, DA; Milburn, PJ; Gibbs, AJ; McCullagh, PJ; Wilson, JD; Tonjes, R. and Simeonovic, CJ (2007), *Immunology and Cell Biology*, 85, 238–248

Cushing's syndrome in a diabetic clinic population, Newsome, S; Chen, K; Hoang, J; Wilson, JD; Potter, JM; Hickman, PE (2008), Internal Medicine Journal, 38, 178-182

Research Update – Sitagliptin and other Gliptins, Wilson, JD (2007), Diabetes Management, 20, 6

## PRESENTATIONS/ABSTRACTS

The contribution of Porcine endogenous retrovirus (PERV) peptide primes the rejection response to porcine cellular xenografts (Oral) C Simeonovic, P Milburn, D Brown, P Hamilton, K Harrid, S Popp, S Bain, JD Wilson and A Gibbs. TSANZ Annual Scientific Meeting (2007)

Levemir and Lantus: A review of dose relativity in Australian clinical practice, A Roberts, T Donnelly, J Flack, C Michaelides, J Prinz, JD Wilson, B O'Leary, M Adena, M Kemp and M Daja. Australian Diabetes Society (2008)

## CANBERRA HOSPITAL

### Endocrinology and Diabetes Research Group

#### STAFF

A/Prof Christopher J Nolan, Head  
Endocrinology and Diabetes Research Group  
and Senior Specialist, Endocrinology, Canberra  
Hospital, A/Prof ANU Medical School

Dr Alexandra Funkat, Postdoctoral Scientist

Dr Paula Maña, PharmD, Postdoctoral  
Scientist

Ms Kavitha Kugathas, Laboratory Technician

Ms Lorraine Elkerbout, Laboratory Technician

Ms Stephanie Cheung, Laboratory Technician

#### STUDENTS

Dr Luis Socha, PhD Student, Awarded Degree-  
Dec 2007, ANU

Dr Arjuna Pathmaperuma, PhD Student, ANU

Ms Jee-Hye Kim, PhD Student, ANU

Dr Leili Madad, MSc Student, ANU

Ms Amie Rieseberg, Medical Student, ANU

Mr Milan Radojevic, Medical Student, ANU

Ms Rushanthi Pereira, Medical Student, ANU

Ms Anne-Gaelle Bedhet, Health Science  
Student, French Exchange Program

Ms Virginie Cogneras, Health Science Student,  
French Exchange Program

#### COLLABORATIVE ASSOCIATES

##### ACT

Prof Geoff Farrell, Liver Research Group,  
Canberra Hospital

Prof Jane Dahlstrom, Anatomical Pathology,  
Canberra Hospital

Prof David Ellwood, Fetal Medicine Unit,  
Canberra Hospital



Jee-Hye Kim, Leili Madad, Associate Professor Chris Nolan, Arjuna Pathmaperuma

A/Prof Alison Kent, Neonatology Unit,  
Canberra Hospital

Dr Walter Abhayaratna, Clinical Trials Unit,  
Canberra Hospital

Prof Christopher Goodnow, John Curtin School  
of Medical Research, Australian National  
University, Canberra, ACT, Australia

### National

Drs Shane Grey, Jenny Gunton, Trevor Biden,  
Ross Laybutt, The Garvan Institute of Medical  
Research, Darlinghurst, NSW, Australia

Dr Sofianos Andrikopoulos, Department of  
Medicine, University of Melbourne, Heidelberg,  
VIC, Australia

### International

Prof Marc Prentki, Director, Montreal Diabetes  
Research Center and Department of Molecular  
Nutrition, University of Montreal, Quebec,  
Canada

Prof Jack Leahy, Director Endocrinology,  
University of Vermont, Burlington, Vermont,  
USA

A/Prof Pelligrino Masiello, Department of  
Experimental Pathology, University of Pisa, Italy

## RESEARCH PROJECTS

*Biochemical basis of islet-beta cell  
compensation and failure in normal pregnancy  
and gestational diabetes mellitus.*

A/Prof Christopher Nolan. Gestational diabetes  
develops due to failure of beta-cell adaptation  
to the insulin resistance of pregnancy. This  
NHMRC funded project is focussed on the  
molecular/biochemical mechanisms of  
beta-cell compensation processes in normal  
pregnancy and beta-cell failure in gestational  
diabetes within rodent models.

*Glucolipotoxicity in the Pathogenesis of  
Diabetic Fetopathy.*

A/Prof Christopher Nolan, Prof Jane Dahlstrom,  
Prof David Ellwood, A/Prof Alison Kent.  
Diabetic pregnancy is associated with  
disordered lipid as well as glucose metabolism.  
This collaborative project between the  
Canberra Hospital Departments of  
Endocrinology, Anatomical Pathology, Fetal  
Medicine and Neonatology is investigating the

importance of interaction of hyperglycaemia  
and hyperlipidaemia in the development of  
fetal abnormalities in diabetic pregnancy.  
Initial studies have focussed on effects of  
elevated glucose, elevated fatty acids and the  
combination of both on trophoblast cells  
isolated from human placenta.

*Mechanisms of disordered hepatic lipid  
partitioning in non-alcoholic steatohepatitis.*

Prof Geoff Farrell and A/Prof Christopher Nolan.  
The Liver Research Group and Endocrinology  
and Diabetes Research Groups are  
collaborating at both the basic and clinical  
science levels on the factors that determine  
the development of non-alcoholic  
steatohepatitis in obesity and type 2 diabetes.

*Non-immune islet  $\beta$ -cell susceptibility factors  
in the NOD mouse model of type 1 diabetes.*

A/Prof Christopher Nolan and  
Prof Christopher Goodnow.  
This work is funded by a NHMRC and the  
Juvenile Diabetes Research Foundation  
Special Program Grant in Type 1 Diabetes with  
collaborators at the Garvan Institute. Drs  
Shane Grey, Jenny Gunton, Trevor Biden, Ross  
Laybutt and the University of Melbourne  
Department of Medicine, Dr Sofianos  
Andrikopoulos. Non-immune islet  $\beta$ -cell  
susceptibility factors may contribute to the  
initiation of  $\beta$ -cell damage and triggering  
of autoimmune attack in the pathogenesis  
of type 1 diabetes (T1D). This hypothesis is  
supported from data generated by the work  
of Dr Luis Socha during his PhD candidature.  
Determination of these factors may lead to  
novel preventative strategies for subjects at  
risk of developing T1D. The aim of this project  
is to determine non-immune islet  $\beta$ -cell  
susceptibility factors in the NOD mouse model  
of T1D.

## CLINICAL TRIALS (NATIONAL & INTERNATIONAL MULTICENTRE):

2005–2008

ADVANCE (Action in Diabetes and Vascular  
Disease), Institute for International Health,  
Sydney NSW Nolan CJ, Principal Investigator,  
Canberra, ACT Site.

## 2005–2007

OPTIONS (Obesity Protocol Targeting an Investigational Option for a New Weight Loss Solution), Metabolic Pharmaceutical Limited, Melbourne, Australia Nolan CJ, Principal Investigator, Canberra, ACT Site.

## 2007–2008

Pfizer Protocol A5251022.

A 1-year, randomized, double-blind, placebo-controlled phase 3 study to evaluate the efficacy and safety of CP-945,598 in the treatment of overweight, oral agent-treated subjects with Type 2 Diabetes. Nolan CJ, Principal Investigator, Canberra, ACT Site.

Roche Protocol BC20799.

Multicentre, double-blind, randomized, placebo-controlled, dose ranging phase 2 study to investigate efficacy, safety, tolerability and pharmacokinetics of the DPP-IV inhibitor RO4876904 in patients with Type 2 Diabetes (BC20779). Nolan CJ, Principal Investigator, Canberra, ACT Site.

## 2007–2009

REASSURE

A randomized, double blind, placebo controlled, parallel-group, fixed dose, Rimonabant (20 mg), multicentre study on HbA1c in overweight or obese patients with type 2 diabetes not adequately controlled on two antidiabetic agents. Nolan CJ, Principal Investigator, Canberra, ACT Site.

## 2008–2010

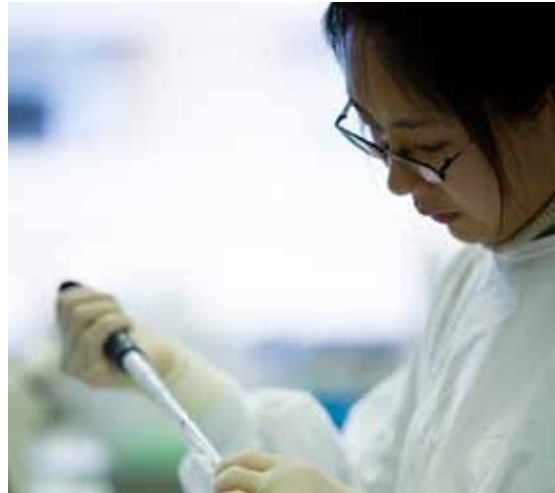
Novo Nordisk Protocol NN304-1687.

A randomised, parallel-group, open-labelled, multinational trial comparing the efficacy and safety of insulin detemir (Levemir®) versus human insulin (NPH insulin), used in combination with insulin aspart as bolus insulin, in treatment of pregnant women with type 1 diabetes. Nolan CJ, Principal Investigator, Canberra, ACT Site.

## FUNDING

### 2006–2007

Nolan C, Ellwood D The Canberra Hospital Private Practice Major Grant. Glucolipotoxicity in the Pathogenesis of Diabetic Fetopathy. \$86,000 per annum for 2 years



Jee-Hye Kim

## 2007–2009

Nolan CJ NHMRC Project Grant. Biochemical basis of islet-beta cell compensation and failure in normal pregnancy and gestational diabetes mellitus. \$154,000 per annum for 3 years

Farrell G and Nolan CJ. NHMRC Project Grant. Mechanisms of disordered hepatic lipid partitioning in non-alcoholic steatohepatitis. \$146,000 per annum for 3 years

## 2008–2012

Grey S, Andrikopoulos S, Biden T, Gunton J, Laybutt R, Nolan C NHMRC/JDRF Special Program Grant in Type 1 Diabetes.  $\beta$ -Cell Mass and Function in Type 1 Diabetes and Islet Transplantation. \$607,550 per annum for 5 years

## PUBLICATIONS

Lamontagne J, Masiello P, Marcil M, Delghingaro-Augusto V, Burelle Y, Prentki M, Nolan CJ: Circulating lipids are lowered but pancreatic islet lipid metabolism and insulin secretion are unaltered in exercise-trained female rats. *Appl Physiol Nutr Metab* 32:241–248, 2007

Przybytkowski E, Joly E, Nolan CJ, Hardy S, Francoeur AM, Langelier Y, Prentki M: Upregulation of cellular triacylglycerol - free fatty acid cycling by oleate is associated with long-term serum-free survival of human breast cancer cells. *Biochem Cell Biol* 85:301–310, 2007



ADVANCE Collaborative Group: Effects of a fixed combination of perindipril and indapamide on macrovascular and microvascular outcomes in patients with type 2 diabetes mellitus (the ADVANCE trial): a randomized controlled trial *The Lancet* 370:829–840, 2007

ADVANCE Collaborative Group: Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes. *N Engl J Med* 358: 2560–2572, 2008

Nolan CJ, Prentki M: The islet  $\beta$ -cell: fuel responsive and so vulnerable. *Trend Endocrinol Metab* 19:285–29, 2008

Nolan CJ: Drug choice for the benefit of the beta-cell: clinical perspective. *CMEonDiabetes.com.au* Copyright © 2008 E-MedHosting.com Inc.

[http://www.cmeondiabetes.com.au/conference/conference.php?e=921&f=18552&c\\_id=688](http://www.cmeondiabetes.com.au/conference/conference.php?e=921&f=18552&c_id=688)

Nolan CJ: Relationship between underlying causes of insulin resistance and beta-cell function.

*CMEonDiabetes.com.au* Copyright © 2008 E-MedHosting.com Inc.

[http://www.cmeondiabetes.com.au/conference/conference.php?c\\_id=658](http://www.cmeondiabetes.com.au/conference/conference.php?c_id=658)

## PRESENTATIONS/ABSTRACTS

Socha L, Goodnow C, Nolan C. Synthesis of disulfide-boded proteins causes non-immune beta-cell damage in a transgenic substrain of non-obese diabetic (NOD) mice. *Proc. Aust. Diabetes Soc.* 2007

Pathmaperuma, A, Kugathas, K, Dahlstrom, J, Ellwood, D, Nolan, CJ Characteristics of glucose and lipid metabolism in human trophoblast cells in primary culture. *Australasian Diabetes in Pregnancy Society Annual Scientific Meeting.* 2007

Kugathas, K, Le-Picard, A, Pathmaperuma, A, Funkat, A, and Nolan, CJ. Overweight but normal glucose tolerance in the offspring of pregnant rats that have gestational diabetes mellitus. *Australasian Diabetes in Pregnancy Society Annual Scientific Meeting.* 2007

Socha, L, Goodnow, C, Nolan, C. Synthesis of disulfide-boded proteins causes non-immune beta-cell damage in a transgenic substrain of non-obese diabetic (NOD) mice. *American Diabetes Association 67th Scientific Sessions.* 2007

Lamontagne, J, Peyot, M-L, Joly, E, Madiraju, MS, Nolan CJ, and Prentki, M. Pioglitazone Has Direct Effects on Pancreatic Beta-Cell Metabolism. *American Diabetes Association 67th Scientific Sessions.* 2007

Nolan CJ. Keynote speaker. Islet beta-cell dysfunction and diabetes in pregnancy. *Diabetes in Pregnancy Study Group (Europe) Annual Scientific Meeting, Spain.* 2007

Nolan CJ. Keynote speaker. The role of beta-cell dysfunction in the pathogenesis of the metabolic syndrome and pre-diabetes. *Novo Nordisk Satellite Symposium at the 2nd Int. Congress on Pre-diabetes and the Metabolic Syndrome, Barcelona.* 2007

Nolan CJ. Grand Rounds Invited Speaker- Islet beta-cell demise in type 2 diabetes-is it inevitable? *The Geelong Hospital Grand Rounds, Geelong, VIC.* 2007

Nolan CJ. Failure of islet beta-cells to compensate in the pathogenesis of gestational diabetes and type 2 diabetes. *Concord Hospital, Endocrinology Unit, Sydney, NSW.* 2007

Nolan CJ, Delghingaro-Augusto, V, Lamontagne, J, Peyot, M-L, and Prentki, M A highly nutrient-responsive labile pool and a stable pool of triglyceride are present in INS 832/13 beta cells. *American Diabetes Association 68th Scientific Sessions.* 2008

Pathmaperuma, A, Kugathas, K, Dahlstrom, J, Ellwood, D, Nolan, CJ. Interaction of glucose and lipid metabolism in human trophoblast cells in primary culture. *American Diabetes Association 68th Scientific Sessions.* 2008

Socha, L, Goodnow, C, Nolan, C. Synthesis of disulfide-boded proteins causes non-immune beta-cell damage in a transgenic substrain of non-obese diabetic (NOD) mice. *Keystone Symposium on Islet Beta-cell Biology, Utah, USA.* 2008

Pathmaperuma AP, Kugathas KT, Cheung S, Nieto PM, Dahlstrom JE, Ellwood DA, Nolan CJ. Free fatty acid esterification and lipid droplet accumulation in human placental trophoblasts in primary culture. *Proc. Aust. Diabetes Soc.* 2008

Yung G, Nolan CJ. Post-partum isolated ACTH deficiency, hyperthyroidism and severe hypercalcaemia. *Society of Obstetric Medicine of Australasia and New Zealand and the Australasian Diabetes in Pregnancy Society Annual Scientific Meetings.* 2008

Nolan CJ. Importance of intrinsic beta-cell susceptibility in both type 1 and 2 diabetes. *Baker Institute of Medical Research, Melbourne, VIC.* 2008

Nolan CJ. Islet beta-cell dysfunction and diabetes in pregnancy. *Royal North Shore Hospital, Endocrine Unit, Sydney, NSW.* 2008

Nolan CJ. The placental trophoblast – not a beta-cell. *Montreal Diabetes Research Center, Quebec, Canada.* 2008

## AWARDS

Pathmaperuma, A, Kugathas, K, Dahlstrom, J, Ellwood, D, Nolan, CJ. Characteristics of glucose and lipid metabolism in human trophoblast cells in primary culture. *Australasian Diabetes in Pregnancy Society Annual Scientific Meeting.* 2007. Dr Pathmaperuma won the young investigator award for this presentation.

## CANBERRA HOSPITAL

### Centre for Advances in Epidemiology and IT

#### STAFF

Dr Bruce Shadbolt, Director

#### STUDENTS

Ruiduan Wang, PhD Student

#### COLLABORATIVE ASSOCIATES

University of Wollongong, Australian Health Outcomes Collaboration

Jan Sansoni

Astoria Barr

#### ACTIVITIES

The Centre's main activity is the provision of a research support service. The type of support includes advice on research study and clinical trial design, biostatistical advice and analysis, grant submissions, student supervision, and instrument assessment.

During 2007–08 the Centre contributed broadly across health research activities in the ACT. The stand out contributions included research support in neonatology, pediatrics, oncology, hematology, pathology, orthopedics, neurology, respiratory health, rheumatology, gastroenterology, and endocrinology.

The Centre supports the ANU Medical School providing tutorial support in the evidence-based medicine sub program.

In April 2008 the Centre co-convened the 13th Australian Health Outcomes Conference with the University of Wollongong. The conference theme was facilitating knowledge exchange and transfer for a dynamic future.

In October 2008 the Centre collaborated with the Pain Management Unit to jointly win the 2008 ACT Health Quality award for consumer participation. The prize was given for our work on an innovative self-managed education program for chronic pain patients.

#### PEER REVIEWED JOURNAL PUBLICATIONS

Talaulikar D, Shadbolt B, McNiven M, Dahlstrom JE. DNA amplification from formalin-fixed decalcified paraffin-embedded bone marrow trephine specimens: does the duration of storage matter? *Pathology*. 2008;40:702–6

Kent AL, Meskell S, Falk MC, Shadbolt B. Normative blood pressure data in non-ventilated premature neonates from 28-36 weeks gestation. *Pediatr Nephrol*. 2009 Jan;24(1):141–6. Epub 2008 Jul 9

Talaulikar D, Dahlstrom JE, Shadbolt B, Broomfield A, McDonald A, Pidcock M. Role of Immunohistochemistry in Staging Diffuse Large B-cell Lymphoma (DLBCL). *J Histochem Cytochem*. 2008 Oct;56(10):893–900. Epub 2008 Jun 23

Talaulikar D, Choudhury A, Shadbolt B, Brown M. Lymphocytopenia as a prognostic marker for diffuse large B cell lymphomas. *Leuk Lymphoma*. 2008;49:959–64

Cahill JL, Shadbolt B, Scarvell JM, Smith PN. Quality of life after infection in total joint replacement. *J Orthop Surg (Hong Kong)*. 2008;16:58-65

Sedaghat N, Ellwood D, Shadbolt B, Kecskes Z, Falk MC, Brussel T, Kent AL. The effect of mode of delivery and anaesthesia on neonatal blood pressure. *Aust N Z J Obstet Gynaecol*. 2008;48:172–8

- Jaques A, Daviskas E, Turton JA, McKay K, Cooper P, Stirling RG, Robertson CF, Bye PT, Lesouëf PN, Shadbolt B, Anderson SD, Charlton B. Inhaled mannitol improves lung function in cystic fibrosis. *Chest*. 2008;133:1388–96
- Cheung PP, Tymms KE, Wilson BJ, Shadbolt B, Brook AS, Dorai Raj AK, Khoo KB. Infliximab in severe active ankylosing spondylitis with spinal ankylosis. *Intern Med J*. 2008;38:396–401
- Talaulikar D, Shadbolt B, Bell J, Khan K, Dahlstrom JE, McDonald A, Pidcock M, Broomfield A. Clinical role of flow cytometry in redefining bone marrow involvement in diffuse large B-cell lymphoma (DLBCL) - a new perspective. *Histopathology*. 2008;52:340–7
- Hillman LC, Chiragakis L, Shadbolt B, Kaye GL, Clarke AC. Effect of proton pump inhibitors on markers of risk for high-grade dysplasia and oesophageal cancer in Barrett's oesophagus. *Aliment Pharmacol Ther*. 2008 15;27:321–6
- Talaulikar D, Dahlstrom JE, Shadbolt B, McNiven M, Broomfield A, Pidcock M. Occult bone marrow involvement in patients with diffuse large B-cell lymphoma: results of a pilot study *Pathology*. 2007;39:580–5
- Seliem WA, Falk MC, Shadbolt B, Kent AL. Antenatal and postnatal risk factors for neonatal hypertension and infant follow-up. *Pediatr Nephrol*. 2007;22:2081–7
- Kent AL, Kecskes Z, Shadbolt B, Falk MC. Blood pressure in the first year of life in healthy infants born at term *Pediatr Nephrol*. 2007;22:1743–9
- Talaulikar D, Gray JX, Shadbolt B, McNiven M, Dahlstrom JE. A comparative study of the quality of DNA obtained from fresh frozen and formalin-fixed decalcified paraffin-embedded bone marrow trephine biopsy specimens using two different methods. *J Clin Pathol*. 2008;6:119–23
- Kent AL, Kecskes Z, Shadbolt B, Falk MC. Normative blood pressure data in the early neonatal period *Pediatr Nephrol*. 2007;22:1335–41

## CANBERRA HOSPITAL

### Gastroenterology and Hepatology

#### STAFF

Assoc. Prof. Lybus Chester Hillmani, Director Mugga Wara Endoscopy, Director Brindabella Endoscopy, Director Tarbolton Pty Ltd for GastrotrACT, Clinical Associate Professor Australian National University

#### STUDENTS

Third year medical student, Ashish Srinivasan

#### COLLABORATIVE ASSOCIATES

GEHU and Pathology Depts. TCH and Brindabella and Mugga Wara Endoscopy

Prof. Douglas Rex, Assoc. Prof. Tony Clarke

Dr Stuart Miller, Sleep Physician

#### RESEARCH PROJECTS

Continuing data acquisition for Barrett's oesophagus database and standardisation of data acquisition between TCH and private endoscopy facilities.

Involvement in multinational assessment of Propofol for sedation for endoscopy procedures.

Initial overnight studies assessing the relationship between gastro-oesophageal reflux and obstructive sleep apnoea.

#### FUNDING

No grants (Research supported by gastrotrACT and Brindabella and Mugga Wara Endoscopy Centres).



Hassam Ajamieh

#### PUBLICATIONS

Papers published in peer-reviewed journals:

Riddell J, Hillman L, Chiragakis L, Clarke A. Collagenous colitis: Oral low-dose methotrexate for patients with difficult symptoms: Long-term outcomes. *J Gastroenterol Hepatol.* 2007;22:1589–93

Hillman LC, Chiragakis L, Shadbolt B, Kaye GL, Clarke AC. Effect of proton pump inhibitors on markers of risk for high-grade dysplasia and oesophageal cancer in Barrett's oesophagus. *Aliment Pharmacol Ther.* 2008;15: 321–6

Hillman L. Colonoscopic removal of an inverted appendix. *J Gastroenterol Hepatol.* 2008; 23:1771

#### EDITORIALS, REVIEWS AND LETTERS

Hillman L. Management strategies for Barrett's oesophagus. *J.Gastroenterol. Hepatol.* 2007; 22:771

Targeting surveillance in Barrett's oesophagus. *J. Gastroenterol Hepatol.* 2008; 23:1311–1312

#### PRESENTATIONS/ABSTRACTS

Invited speaker

Practice Management – Research in Private Practice

Australian Gastroenterology Week, Brisbane Australia 2008

Gubicak S, Hillman LC, Clarke AC. A prospective study of the management of therapeutically challenging polyps in a community setting. *J. Gastroenterol. Hepatol.* 2008; 23 (Suppl.4): A232

Srinivasan AR, Hillman LC, Hebbard G, Miller S, Wawn E. A new method of investigating the relationship between sleep apnoea and gastro-oesophageal reflux. *J. Gastroenterol. Hepatol.* 2008; 23 (Suppl.4): A290

## CANBERRA HOSPITAL

### Inflammatory Bowel Disease Research Group

#### STAFF

Associate Professor Paul Pavli, Senior Staff Specialist, Canberra Hospital and Associate Professor, ANU Medical School

Dr Peter Tyrer, Post-Doctoral Fellow, Canberra Hospital, Visiting Fellow ANU Medical School, Adjunct Professional Associate, Cell Biology, Immunology and Biochemistry, University of Canberra

Anna Powell, Research Assistant (to January 2008)

Jennifer Kerrigan, Research Assistant (from May 2008)

#### STUDENTS

Jennifer Kerrigan, *Upstream Signalling to Nod2*. University of Canberra, BSc Hons. Supervisors: Ruth Foxwell, Peter Tyrer and Paul Pavli

Claire O'Brien, *Molecular microbiology of IBD*. PhD ANU. Supervisors: Paul Pavli, Gwen Allison, Jane Dahlstrom; Advisor: Peter Tyrer

Michelle Nelson, *Protein Bound 3,4-Dihydroxyphenylalanine as a Signal for Enhanced Antioxidant Defences* PhD University of Canberra. Supervisors: Peter Tyrer, Roger Dean and Ruth Foxwell (completed March 2008)

#### COLLABORATIVE ASSOCIATES

Dr Gwen Allison, School of Biochemistry & Molecular Biology, ANU

Associate Professor Ruth Foxwell, Faculty of Applied Science, University of Canberra

Professor Jane Dahlstrom, Anatomical Pathology, Canberra Hospital and ANU Medical School

#### RESEARCH PROJECTS

*The overall research program is directed at clinical and basic scientific aspects of inflammatory bowel diseases (IBD)*



A/Prof Paul Pavli

#### Clinical trials in IBD

Paul Pavli

The GEHU has participated in international multicentre drug trials of the following agents: interleukin 11, CDP571 (anti-TNF agent), onercept (anti-TNF agent), natalizumab (anti-integrin agent), infliximab (for ulcerative colitis), CDP870 (certolizumab), OPC6535, abatacept and anti-mycobacterial agents (rifabutin, clarithromycin and clofazamine).

*Crohn's Disease Associated Intracellular Signalling in Monocytes/ Macrophages*  
Peter C Tyrer, Paul Pavli, A Ruth Foxwell, Anna Powell, Jennifer Kerrigan

The demonstration that the first genetic abnormality described in Crohn's disease affects a monocyte lineage-specific gene, NOD2, has given considerable impetus to the further development of techniques to study intestinal macrophage and blood monocyte function. Current research has focussed on the downstream signalling event after activation of NOD2, but nothing is known of the events that lead to NOD2 activation and its regulation. We are using highly enriched populations of blood monocytes and monocytic cell lines to study the function of NOD2. We have used immunoprecipitation and fluorescence

deconvolution microscopy with image analysis to show that NOD2 interacts with a known innate immune system receptor, cell-surface calreticulin, in a muramyl dipeptide-dependent manner, suggesting that calreticulin operates upstream of NOD2. We have examined the effects of the anti-inflammatory cytokine, transforming growth factor- $\beta$  (TGF- $\beta$ ), which is found at elevated levels within the gut, to regulate NOD2. Immunofluorescence microscopy of isolated monocytes shows that TGF- $\beta$  downregulates the expression of NOD2 protein in monocytes from normal subjects, but fails to do so in monocytes from Crohn's disease patients. In addition, fluorescence deconvolution microscopy shows that NOD2 interacts with components of the TGF- $\beta$  signalling cascade in the human monocytic THP1 cell line. We have shown that TGF- $\beta$  inhibits lipopolysaccharide and muramyl dipeptide induced NF- $\kappa$ B signal transduction. MDP/NOD2 signalling has been found, by our group, to be influenced by the Smad, PI3K/Akt and MEK1 pathways. This work is beginning to reveal the events that lead to the activation and regulation of NOD2 and has the potential to identify targets for therapeutic intervention in Crohn's disease.

*Interaction between intestinal epithelial cells and peripheral blood monocytes*

Peter C Tyrer, Paul Pavli, A Ruth Foxwell

Intestinal macrophages exist in a state of relative 'unresponsiveness' to activating stimuli when compared to peripheral blood monocytes. We have developed a unique model of human monocyte-epithelial cell interactions. The model consists of freshly isolated peripheral blood monocytes cocultured with the human enterocyte-like Caco-2 cells separated by a semi-permeable polycarbonate membrane. This model displays the features of intestinal monocytes, for example reduced expression of pro-inflammatory markers, such as CD14. We used the model to examine the pathophysiological effects of two bacterial pathogen-associated molecular pattern molecules, lipopolysaccharide and muramyl dipeptide. Both molecules increased the number of monocytes that were able to migrate across the membrane barrier, increased the expression of CD14, induced apoptosis, and reduced the integrity of the epithelial barrier. This model shows promise for the study of

intestinal disease, oral tolerance, and drug and vaccine delivery.

*Use of laser capture microdissection to identify bacteria in lymph nodes of Crohn's disease patients*

Gwen Allison, Jane Dahlstrom, Kathy Francki, Paul Pavli

The proposed study aims to determine whether bacteria can be identified in draining lymph nodes of patients who suffer from Crohn's disease using new culture-independent techniques.

*Genetic studies of the inheritance of IBD*

Paul Pavli

The Australian Familial IBD Register, established in 1991 with assistance of the Australian Crohn's and Colitis Association and colleague gastroenterologists, now includes details of over 350 multiplex IBD families. There are >700 affected individuals. Studies are being performed on extracted DNA to find susceptibility genes for IBD.

*Role of Protein-Bound DOPA in Antioxidant Defences*

Roger T Dean, A Ruth Foxwell, Michelle Nelson, Peter C Tyrer

Proteins are continually exposed to damaging free-radicals, resulting in the production of oxidised protein, a process that has been implicated in the initiation and progression of many age-related diseases. DOPA (3,4-dihydroxyphenylalanine) is a product of protein oxidation, formed through the oxidation of tyrosine residues and is currently the major treatment for Parkinson's disease. DOPA, a redox active molecule, is involved in various pathologies, including neurodegenerative disorders, cataracts and atherosclerosis. Due to its chemical nature, DOPA is capable of acting as either a pro-oxidant or an antioxidant and we propose that under physiological conditions, DOPA is likely to act as an antioxidant, and may act as a signalling molecule, triggering the enhancement of cellular antioxidant defence systems. In support of this hypothesis, we have determined that in human monocytes, DOPA at physiological concentrations, is incorporated into cellular proteins, does not exhibit cytotoxicity, and able to protect cells from oxidative stress. Additionally, exposure to DOPA

alters the expression of proteins involved in antioxidant defences, cytoskeletal organisation, protein chaperoning, metabolism and innate immunity. This work shows that DOPA has significant anti-oxidant effects on cells and has the potential to allow the use of DOPA in diseases such as atherosclerosis and cataracts.

## FUNDING

2006–2007

The Canberra Hospital Private Practice Fund \$99,000 *Identification of Signal Transduction Abnormalities of Monocytes in Crohn's Disease* Dr Peter C Tyrer, Associate Professor Paul Pavli, Associate Professor A Ruth Foxwell

## PUBLICATIONS

Fisher L, Fisher A, Pavli P, Davis MW. *Perioperative acute upper gastrointestinal haemorrhage in older patients with hip fracture: incidence, risk factors and prevention*. *Aliment Pharmacol Therap* 2007; 25:297–308

Grimpen F, Pavli P. *Rational investigation of upper abdominal pain*. *Australian Family Physician*. 2008; 37:602–607

Grimpen F, Pavli P. *Inflammatory bowel disease in older people*. *J Pharmacy Practice and Research* 2008; 38:234–238

Kennedy KJ, Walker S, Pavli P, Hallam L, Hemmings C. *What may underlie recurrent purpura fulminans?* *Med J Aust* 2007; 186:373–375

Pavli P. *Inflammatory bowel disease*. *Pocket Clinical Gastroenterology*. Talley, N, Segal I. (eds) 2007

Pavli P, Summers KM. *Identifying susceptibility to inflammatory bowel diseases: A candidate gene approach, genome-wide association studies, or both?* *J Gastroenterol Hepatol* 2008; 23:6–7

Selby WS, Pavli P, Crotty B, Florin T et al. *Two-year combination antibiotic therapy with clarithromycin, rifabutin and clofazimine For Crohn's disease*. *Gastroenterology* 2007; 132:2313–2319

Selby WS, Pavli P, Crotty B, Florin T. Letter. *Gastroenterology* 2007

Thomson A, Tye-Din J, Tonga S, Scott J, McLaren C, Pavli P, Lomas F. *Aspiration in the context of upper gastrointestinal endoscopy*. *Can J Gastroenterol* 2007; 21: 223–225

Tyrer PC, Ruth Foxwell A, Kyd JM, Otczyk DC, Cripps AW. *Receptor mediated targeting of M-cells*. *Vaccine* 25 3204–3209 (2007)

## PRESENTATIONS/ABSTRACTS

*TGF-β Regulates the Crohn's Disease-Associated Protein, Nod2* Peter C. Tyrer, Anna Powell, Elaine G Bean, Jennifer Kerrigan, A. Ruth Foxwell and Paul Pavli 38th Australian Society for Immunology Conference, Canberra, December 2008 (poster presentation)

*Function of Nod2: The Role of TGF-β* Peter Tyrer, Mater Medical Research Institute Mucosal Disease Symposium, Brisbane, October 2008 (invited speaker)

*Upstream Signalling to, and Negative Regulation of, Nod2* Peter C Tyrer, Anna C Powell, Elaine G Bean, Jennifer L Kerrigan, A Ruth Foxwell, Paul Pavli Canberra Regional Health and Medical Research Conference, May 2008 (speaker)

*Pathophysiological Effects of Muramyl Dipeptide in a Novel Coculture Model of Intestinal Epithelium and Monocyte Interactions*. Peter C Tyrer, Elaine G. Bean, Anna C. Powell, A. Ruth Foxwell, Paul Pavli 13th International Congress of Mucosal Immunology, Tokyo, Japan, July 2007 (poster presentation)

*Pathophysiological Effects of Muramyl Dipeptide in a Novel Coculture Model of Intestinal Epithelium and Monocyte Interactions*. Peter C Tyrer, Elaine G. Bean, Anna C. Powell, A. Ruth Foxwell, Paul Pavli Australian Society for Medical Research Young Investigator of the Year Forum, Canberra, June 2007 (winner of Guan Chong Young Investigator of the Year Award)

## AWARDS

Dr Peter Tyrer, Guan Chong Young Investigator of the Year Award 2007 Canberra Regional Health and Medical Research Conference, and Australian Society for Medical Research Young Investigator of the Year Forum, Canberra, June 2007



## CANBERRA HOSPITAL

# Liver Research Group, Gastroenterology and Hepatology Unit

### STAFF

Professor Geoff Farrell, Director  
Gastroenterology and Hepatology Unit,  
Canberra Hospital, Professor of Hepatic  
Medicine, ANU Medical School

Dr Narci Teoh, Senior Lecturer in Medicine and  
Senior Staff Specialist, Gastroenterology and  
Hepatology Unit, Canberra Hospital

Dr Shiv Chitturi, Senior Staff, Specialist,  
Gastroenterology and Hepatology Unit,  
Canberra Hospital

Dr Claire Larter, Post-doctoral Scientist

Dr Pawan Pyakurel

JY (Helen) Hou

Sydney Hodge

Jacqueline Williams

Derrick van Rooyen

Leah Maddocks

Matthew Clyne

John Brooling

### Distinguished Visitors

Sabbatical leave, August 2007–July 2008:  
Professor Jiangao Fan, Center for fatty liver  
disease, Shanghai First People's Hospital,  
Jiaotong University, Shanghai, China

Professor Henry Chan, collaborating senior  
investigator, Chinese University of Hong Kong  
(October 2008)

Dr Usha Dutta, Postgraduate Institute for  
Medical Research, Chandigarh, India

### STUDENTS

Déborah Heydet, PhD, ANUMS  
Supervisors: Geoff Farrell, Claire Larter,  
Carol Hill

Sharon Pock, PhD, ANUMS  
Supervisor: Narci Teoh

Kamaljit Ghatora, year 1 medical student,  
ANUMS (research project)

Marianna Heales, summer vacation student  
(medicine, University of Tasmania)

### COLLABORATIVE ASSOCIATES

Professor Anthony C. Allison, 'Alavita'  
Biotechnology Inc, San Francisco

Professor Phillip Board, JCSMR, ANU

Professor Chris Parish, JCSMR, ANU

Dr Gerard Hoyne and Professor Chris  
Goodnow, JCSMR, ANU

Associate-Professor Chris Nolan,  
Endocrinology, TCH and ANU Medical School

Dr Carol Hill, JCSMR, ANU

Professor Jenny Graves and Dr Amber Alsop,  
RSB, ANU; and Peter MacCallum Institute,  
Melbourne

Professor Robert S. McCuskey,  
University of Arizona, Tucson

Professor Henry Chan, Chinese University  
of Hong Kong, Hong Kong

Professor Paul Lai,  
Chinese University of Hong Kong

Dr Jun Yu, Chinese University of Hong Kong,  
Hong Kong

Professor Jiangao Fan, Shanghai First People's  
Hospital, Jiaotong University, Shanghai, China

Dr Lisa Sedger, University of Technology,  
Sydney

Dr Matthew Yeh, University of Washington,  
Seattle

Dr Geoffrey Haigh, Gastroenterology Unit,  
VA Hospital, UW (Seattle)

Professor Sum Lee, Gastroenterology Unit,  
VA Hospital, UW (Seattle)

Dr George Ioannou, Gastroenterology Unit,  
VA Hospital, UW (Seattle)

Drs Patrick Bertolino, Nick Shackel, Fiona Warner, Liver Immunobiology Group, Centenary Institute, University of Sydney

Professor Mark Febbraio, Baker Institute, University of Melbourne, Melbourne

Dr Andrew Janke and Professor Mark Budge, Geriatric Research, ACRS

## RESEARCH PROJECTS

### *Main Fields of Study*

**Liver carcinogenesis (Narci Teoh):** Role of DNA repair mechanisms in the pathogenesis of hepatocellular carcinoma. Two major papers have resulted from this work in 2007–08, respectively showing accelerated onset of liver cancer in Ku70-gene-deleted mice (published in *Hepatology* 2007), and abrogation of hepatocarcinogenesis in ATM gene-deleted mice (provisionally accepted by *Gastroenterology*). This has led to several promising leads in pro-cancer pathways (identified by comparative genomic hybridization), the significance of which is now being tested in primary cultures of murine liver cancer cells.

**Liver ischaemia-reperfusion injury:** Novel hepatoprotective strategies against hepatic

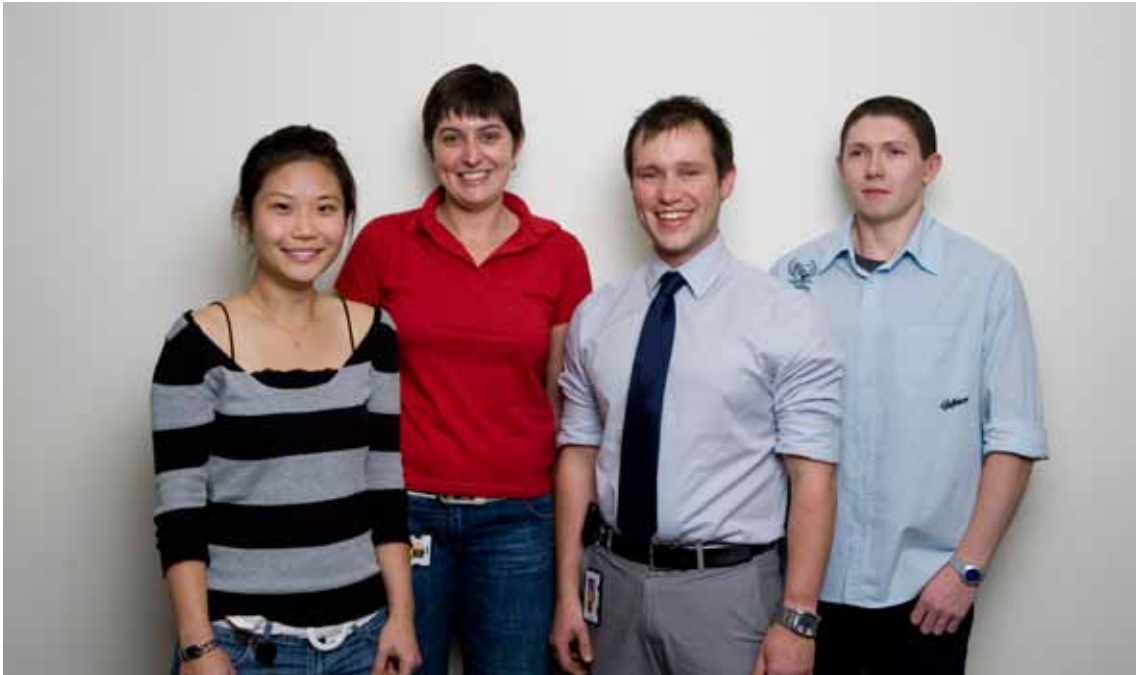
ischaemia reperfusion injury in murine models. This has led to a pivotal article in *Gastroenterology* 2007, which was editorialised, showing that the novel therapeutic protein diannexin (an annexin V dimer) confers hepatoprotection against ischaemia-reperfusion injury. Other work has characterized ways to protect fatty livers against this serious form of injury incurred during surgery or liver transplantation, as we reviewed in *Anatomical Record*.

**Obesity-related liver disease:** Microvascular dysfunction and predisposition to liver cancer. This is an exciting new field of research that is critically relevant to our clinical research program in diabetes and non-alcoholic fatty liver disease (NAFLD).

**Mechanisms of non-alcoholic fatty liver disease:** This has been a very productive area of research, with the earlier emphasis being on the role of fatty acids in development of steatohepatitis (NASH) (2 articles in 2008). During the last 18 months, we have characterised the role of dietary fat content on development of NASH in obese mice (*foz/foz* – mutation of Alstrom gene) with diabetes and metabolic syndrome. New directions are hypothalamic dysregulation of appetite (Deborah Heydet), factors determining hepatic



Leah Bala, Derrick van Rooyen, Sharon Pok, Deborah Heydet, Betty Rooney, Professor Geoff Farrell, Dr Narci Teoh, Hussam Ajamieh, Pawan Pyakurel, Leah Maddocks, Dr Claire Larter, Connor O'Meara



Sharon Pok, Deborah Heydet, Connor O'Meara, Derrick van Rooyen

lipid partitioning (Claire Larter), and role of cholesterol accumulation in onset of liver injury, hepatic inflammation and fibrogenesis (Derrick vanRooyen).

**Role of TRAIL in liver biology:** In collaboration with Dr Lisa Sedger, we have observed what appears to be a highly novel role for the TNF superfamily member, TRAIL in liver biology – the regulation of cell survival during chronic liver injury and after partial hepatectomy.

**Why does cirrhosis occur in type 2 diabetes, and how can it be prevented?** [Geoff Farrell, Shiv Chitturi, Chris Nolan]. This project was started in 2007 by Shiv Chitturi with in-put from Dr Sally Newsome (ANU Research Fellow of TCH), and has been ably carried forward by Ms Sydney Hodge (project officer) in 2008.

The aims are to identify factors associated with severe liver scarring (cirrhosis) in patients with diabetes, and to evaluate the impact of lifestyle measures (dietary intake, physical activity) on the prevention and treatment of non-alcoholic fatty liver disease (NAFLD) in these patients. The two cohorts being studied are a Community cohort consists of newly diagnosed type 2 diabetic patients recruited from peripheral Diabetes education centres, and a Liver clinic cohort of patients referred to The Canberra Hospital Liver clinic for

assessment of their abnormal liver tests. Data analysis will commence 2009.

## FUNDING

2005–2009

NHMRC Program Grant #358398  
GC Farrell CIA, G McCaughan CIB; NC Teoh PI.  
*The molecular and cellular basis of liver disease.* \$4,700,000 over 3 centres

2007–2009

NHMRC Project Grant #418101  
GC Farrell, CJ Nolan. *Mechanisms of disordered hepatic lipid partitioning in non-alcoholic steatohepatitis.* \$432,000  
NHMRC Project Grant #418100  
NC Teoh; AIA: Jenny Graves; AIB: Amber Alsop; AIC: Geoff Farrell. *DNA repair mechanisms in the pathogenesis of hepatocellular carcinoma.* \$326,250

2008–2010

Philip Bushell Foundation, *Why does cirrhosis develop in diabetes, and how can it be prevented?* CI. Geoff Farrell

2007

Narci Teoh. Arnott Fellowship in Cancer Research, RACP. *Pathogenesis of hepatocellular carcinoma*

## PUBLICATIONS

2007

Dela Pena A, Leclercq I, Field J, Farrell GC. NADPH oxidase is not an essential mediator of oxidative stress or liver injury in murine dietary steatohepatitis. *J Hepatol* 2007;46:304–13

Larter CZ, Cheng J, Bell-Anderson KS, Farrell GC. Activation of PPAR by dietary fish oil attenuates steatosis, but does not prevent experimental steatohepatitis because of hepatic lipoperoxide accumulation. *J Gastroenterol Hepatol* 2007;22:267–75

Teoh NC, Ito Y, Field J, Bethea NW, Amr D, McCuskey MK, McCuskey RS, Farrell GC, Allison AC. Diannexin, a novel annexin V homodimer, provides prolonged protection against hepatic ischemia-reperfusion injury in mice. *Gastroenterology* 2007;133:632–46 (editorialised)

Cua IC, Hui JM, Bandara P, Kench J, Farrell GC, McCaughan G, George J. Insulin resistance and liver injury in hepatitis C is not associated with virus-specific changes in adipocytokines. *Hepatology* 2007;46:66–73

Yu J, Chu ESH, Hui AY, Cheung KF, Chan HLY, Leung WK, Farrell GC, Sung JY. Lipoprotein lipase activator ameliorates the severity of dietary steatohepatitis. *Biochem Biophys Res Commun* 2007;356:53–9. Epub Feb

Chitturi S, Farrell GC. Drug Induced Liver Disease. *Schiff's Diseases of the Liver*, 10th Edition, Schiff ER, Sorrell MF, Maddrey WC (Eds). Lippincott Williams & Wilkins, New York. 2007. Chapter 38:923–1004

Farrell GC Déjà vu, mais pas en anglais! Precautionary notes on publishing the same article in two Languages. (Editorial) *J Gastroenterol Hepatol* 2007;22:699–700

Farrell GC. New hepatitis C guidelines for the Asia-Pacific region: APASL consensus statements on the diagnosis, management and treatment of hepatitis C virus infection. [Editorial]. *J Gastroenterol Hepatol* 2007; 22:607–10

Chitturi S, Farrell GC. TNF-alpha as therapeutic target in NASH: tried, but not yet proven. [Editorial]. *J Gastroenterol Hepatol* 2007;22:613–4

Farrell GC, Yeomans ND. Emerging leaders of gastroenterology and hepatology in the Asia

Pacific region. [Editorial] *J Gastroenterol Hepatol* 2007;22:961–2

Farrell GC, Chitturi S, Lau GKK, Sollano J, and the Asia-Pacific Working Party on NAFLD. Guidelines for the assessment and management of non-alcoholic fatty liver disease in the Asia-Pacific region. Executive Summary. *J Gastroenterol Hepatol* 2007;22:775–7

Chitturi S, Farrell GC, Hashimoto E, Saibara T, Lau GKK, Sollano J, the Asia-Pacific Working Party on NAFLD. Non-alcoholic fatty liver disease in the Asia-Pacific region: definitions and overview of proposed guidelines. *J Gastroenterol Hepatol* 2007;22:778–87

Chan HL, de Silva HJ, Leung NW, Lim SG, Farrell GC, the Asia-Pacific Working Party on NAFLD. How should we manage patients with non-alcoholic fatty liver disease in 2007; *J Gastroenterol Hepatol* 2007;22:801–8

Chitturi S, Farrell GC. Fatty liver disease now, heart attack later? [Editorial] *J Gastroenterol Hepatol* 2007;22:967–9

Farrell GC, Desmond PV, Wong BC, the Editors of *Journal of Gastroenterology and Hepatology*. Agent orange: your new look JGH (the improvements go deeper than the cover). (Editorial) *J Gastroenterol Hepatol* 2007;22:1167–8

Teoh N, Hartley J. Modifications to the UW: simple solutions to the 'sticky' problem of preservation injury in liver transplantation. *J Gastroenterol Hepatol* 2007;22:1564–1565

2008

Larter CZ, Yeh MM, Haigh WG, Williams J, Brown S, Bell-Anderson KS, Lee SP, Farrell GC. Hepatic free fatty acids accumulate in experimental steatohepatitis: role of adaptive pathways. *J Hepatol* 2008;48:638–47

Poustchi H, Mohamadkhani A, Bowden S, Montazeri G, Ayres A, Revill P, Farrell GC, Locarnini S, Malekzadeh R. Clinical significance of precore and core promoter mutations in genotype D hepatitis B-related chronic liver disease. *J Viral Hep* 2008;15:753–60

Larter CZ, Yeh MM, Williams J, Bell-Anderson KS, Farrell GC. MCD-induced steatohepatitis is associated with hepatic adiponectin resistance and adipogenic transformation of hepatocytes. *J Hepatol* 2008;49:407–16

Farrell GC, Teoh NC, McCuskey RS Hepatic microcirculation in fatty liver disease. *Anat Rec* 2008;291:684–94

Fan JG, Farrell GC Epidemiology of non-alcoholic fatty liver disease in China, *J Hepatol* 2008 (in press)

Shi JP, Fan JG, Wu R, Gao XQ, Zhang L, Wang H, Farrell GC. Prevalence and risk factors of hepatic steatosis and its impact on liver injury in Chinese patients with chronic hepatitis B infection. *J Gastroenterol Hepatol* 2008;23:1419–25

Fan JG, Farrell GC. VAT fat is bad for the liver, SAT fat is not! (Editorial), *J Gastroenterol Hepatol* 2008;23:829–32

Farrell GC. Primary biliary cirrhosis in Asians: less common than in Europeans, but just as depressing. (Editorial) *J Gastroenterol Hepatol* 2008;23:508–11

Chitturi S, Farrell GC. Hepatotoxic slimming aids and other herbal hepatotoxins. *J Gastroenterol Hepatol* 2008;23:366–73

Goh KL, Farrell GC. Publications from China: the sleeping giant awakens. (Editorial), *J Gastroenterol Hepatol* 2008;23 341–3

Farrell GC. A feast of new offerings from JGH in the year of the rat! (Editorial) *J Gastroenterol Hepatol* 2008;23:169–70

De Silva AP, Kasturiratne A, Liyanage DL, Karunanayaka TK, de S Hewavisenthi SJ, Dassanayake AS, Farrell GC, de Silva HJ Is past exposure to hepatitis A protective against progressive fibrosis in non-alcoholic fatty liver disease? (Letter). *Liver Int* 2008;28:147–9

Teoh NC, Bowden FJ. Bring out your dead—the return of the long case? *BMJ* 2008;336:1250

Teoh N, Dan YY, Swisshelm K, Gu Y, Fausto N. Defective Ku70 DNA double strand break repair enhances hepatocarcinogenesis in mice. *Hepatology* 2008; 47:2078–2088

Teoh NC, Fan JG. Diabetes and increased risk of hepatocellular carcinoma recurrence. *J Gastroenterol Hepatol* 2008;23:1633–1634

#### INTERNATIONAL INVITED LECTURES

Narci Teoh

Hepatology State of the Art Lecture: Advances in Current Therapy for patients with Chronic Hepatitis C

New Zealand Gastroenterology Society Meeting, Christchurch 2007

Management of Hepatocellular Carcinoma: Novel Protective Strategies against Hepatic Ischaemia Reperfusion Injury

International Liver Congress, Hong Kong, June 2008

Geoff Farrel

Gastroenterology Society of New Zealand, Annual Scientific Meeting, Christchurch: 21-23 October: Keynote lecture – *Better management of chronic hepatitis B; Liver injury from drugs and herbal medicines*

Haemophilia Society of Australia and New Zealand, Canberra, 5 October. Keynote speaker: *Advances in treatment of hepatitis C*

Singapore National University Hospital and NUS Visiting Expert in field of Fatty Liver Disease and Drug-Induced Liver Injury. April 22–27 [6 lectures].

Asia-Pacific Association for Study of the Liver, Kyoto, Japan. March 27–30. Invited Chair: The Okuda Symposium on Training in Hepatology in Asia.

Asia-Pacific Digestive Week, Kobe, October 2007. Pathogenesis of NAFLD: insights from man and mouse

Feb International Liver Congress (Hong Kong – Shanghai meeting), February – 3 lectures.

Asia-Pacific Digestive Week, Delhi, September 2008. Pathogenesis of insulin resistance in NAFLD

#### PRESENTATIONS

*Other than listed as published abstracts – all of which were presented at the indicated meeting*

Teoh NC, Williams J, Larter CZ, McCuskey RS, Farrell GC. Increased susceptibility of steatotic and steatohepatic livers to hepatic ischaemia reperfusion injury.

*Oral presentation at the Australian Liver Association Research Meeting, Hunter Valley, June 2007.*

Teoh NC, Williams J, Larter CZ, McCuskey RS, Farrell GC. Increased susceptibility of steatotic and steatohepatic livers To hepatic ischaemia reperfusion injury

Poster presentation at The Asia Pacific Digestive Week, Kobe, Oct 2007.

Teoh NC, Williams J, Larter CZ, McCuskey RS, Farrell GC. Increased susceptibility of steatotic and steatohepatic livers from *foz/foz* mice to hepatic ischaemia reperfusion injury

Oral presentation at NZ Gastroenterology Society meeting, Christchurch, Nov 2007

## ABSTRACTS

Teoh NC, Williams J, Larter CZ, McCuskey RS, Farrell GC. Increased susceptibility of steatotic and steatohepatic livers from *foz/foz* mice to hepatic ischaemia reperfusion injury. *Journal of Gastroenterology and Hepatology* 2007; 22(Suppl2):A237. *Australian Gastroenterology Week 2007 (October, Perth, WA)*

Pyakurel P, Alsop A, Gu Y, Teoh N. Genomic alterations in a DNA repair-deficient mouse model of accelerated liver carcinogenesis. *J Gastroenterol Hepatology* 2007;22 (Suppl. 3):A360

Larter CZ, Teoh NC, Yeh M, Haigh G, Williams J, Kugathas K, Hou J, Pang M, Clyne M, Lee SP, Nolan C, Farrell GC. Fibrosing steatohepatitis develops in *foz/foz* mice fed a high fat diet for 6 months. *J Gastroenterol Hepatol* 2007; 22(Suppl. 3):A236

Teoh NC, Williams J, Larter CZ, McCuskey RS, Farrell GC. Increased susceptibility of steatotic and steatohepatic livers from *foz/foz* mice to hepatic ischemia reperfusion injury. *J Gastroenterol Hepatol* 2007;22(Suppl. 3):A237

Farrell GC. Pathogenesis of non-alcoholic fatty liver disease (NAFLD). *J Gastroenterol Hepatol* 2007;22(Suppl. 3):A30 *Australian Gastroenterology Week 2008 [October, Brisbane, Qld]*

Teoh NC, Williams J, McCuskey RS, Allison AC, Farrell GC. Protecting fatty livers against Ischaemia reperfusion injury: novel strategies and mechanisms. *J Gastroenterol Hepatol* 2008; 23:A245

Pyakurel P, Alsop A, Gu Y, Farrell GC, Teoh NC. Genomic alterations in a Ku70-deficient Mouse model of hepatocellular carcinoma: insights into hepatocarcinogenesis. *J Gastroenterol Hepatol* 2008;23:A246

Larter CZ, Yeh MM, Teoh NC, Farrell GC. High

fat-feeding saturates adipose stores, decreasing Serum adiponectin and causing steatohepatitis in obese mice: implications for NASH. *J Gastroenterol Hepatol* 2008;23:A269

*Liver Week 2008; American Association for the Study of Liver Disease (November, San Francisco, CAL)*

Teoh NC, Williams J, McCuskey RS, Allison AC, Farrell GC. Protecting Fatty Livers Against Ischemia Reperfusion Injury: Novel strategies and mechanisms. *Hepatology* 2008;48:746: 639A

Larter CZ, Yeh MM, Teoh NC, Farrell GC. Dietary intervention attenuates metabolic abnormalities and improves liver histology in obese mice with steatohepatitis: Mechanistic implications for NASH. *Hepatology* 2008;48:1175: 831A

Teoh NC, Pyakurel P, Yock Young D, Fausto N, Gu Y, Farrell GC. Induction of P53 renders ATM deficient mice refractory to hepatocarcinogenesis. *Hepatology* 2008;48:1524: 984A

## AWARDS

2007 Inaugural Geoff Farrell Journalism Award for Hepatitis C by Hepatitis Australia. Narci Teoh: Prize for Best Laboratory Science Oral Presentation 2008

Canberra Region Annual Scientific Meeting, Canberra. Claire Larter: Prize for Best Poster 2008. Canberra Region Annual Scientific Meeting, Canberra

## CANBERRA HOSPITAL

### Intensive Care Unit

#### STAFF

Dr Imogen Mitchell, Director, Intensive Care  
 Dr Anne Leditschke, Director of Research  
 Rebecca Ashley, Research and Data Coordinator  
 Andrew Bailey, Research and Data Coordinator  
 Elise Crowfoot, Research and Data Coordinator  
 Jamie Ranse, Research and Data Coordinator

#### STUDENTS

Gavin Williams, ANU Medical School  
 Laura Wise, ANU Medical School  
 Parul Bali, ANU Medical School  
 Joseph Kim, ANU Medical School  
 Lola Kurimalawai, Postgraduate student,  
 University of Canberra

#### COLLABORATIVE ASSOCIATES

Associate Professor Paul Smith, Trauma and  
 Orthopaedic Research Unit  
 Dr Rachel Li, Trauma and Orthopaedic  
 Research Unit  
 Professor Julia Potter, Professor of Pathology  
 ANU Medical School  
 Associate Professor Peter Hickman, Director of  
 Chemical Pathology, ACT Pathology  
 Professor Peter Collignon, Director of Infectious  
 Diseases/Microbiology, Canberra Hospital  
 Dr Karina Kennedy, Department of Infectious  
 Diseases/Microbiology, Canberra Hospital  
 Dr Carolyn Hawkins, Canberra Hospital

#### RESEARCH PROJECTS

*Australia & New Zealand Intensive Care  
 Society Clinical Trials Group Research*  
 2008 saw the conclusion of 2 large multi-  
 centre clinical trials endorsed by the Australia

& New Zealand Intensive Care Society Clinical  
 Trial Group (ANZICS CTG).

The *NICE Study* (Normoglycaemia in Intensive  
 Care Evaluation) was a huge undertaking,  
 funded by the National Health and Medical  
 Research Council, examining the effects of two  
 blood glucose targets (4.5–6.0mmol/L and  
 8–10mmol/L) on 90 day all-cause mortality in  
 Intensive Care patients. Of a total 6104 patients  
 randomised, the Canberra Hospital Intensive  
 Care Unit recruited 307 (5%). Preliminary  
 results will be presented in February 2009 and  
 are eagerly awaited by the Intensive Care  
 community.

The *RENAL Study* (Randomised Evaluation of  
 Normal Vs Augmented Level of Renal  
 Replacement Therapy in ICU) compared the  
 effect of a higher continuous renal  
 replacement therapy (CRRT) flow rate (40mls/  
 kg/hr) with a lower CRRT flow rate (25mls/kg/  
 hr) on 90-day all-cause mortality in Intensive  
 Care Unit patients with severe acute renal  
 failure. This study reached the recruitment  
 target of 1510 patients ahead of schedule,  
 and preliminary results are also expected in  
 February of 2009.

Currently, we are working towards commencing  
 another ANZICS CTG study in 2009. *ARISE*  
 (The Australasian Resuscitation in Sepsis  
 Evaluation) is a Randomised Controlled Trial  
 of Early Goal Directed Therapy in Patients with  
 Severe Sepsis, an international collaboration  
 which has received significant financial  
 support from the National Health & Medical  
 Research Council.

In 2007, Canberra Hospital Intensive Care Unit  
 participated in 3 Point Prevalence Projects  
 conducted on behalf of the ANZICS CTG. VTE  
 was a Point Prevalence Survey of Venous  
 Thromboembolism Prophylaxis Management in  
 the critically ill. The one day snapshot project  
 aimed to identify current practices in deep vein  
 thrombosis prophylaxis among intensive care  
 units throughout Australia and New Zealand.



Rebecca Ashley, Dr Imogen Mitchell, Helen Rodgers

*VTE Sepsis* studied the same practices, specifically in Critically Ill patients with sepsis, over a 4 week period during May and June 2007.

The Saline Albumin Fluid Evaluation Translation of Research into Practice Study SAFE TRIPS was a follow up to the Saline Albumin Fluid Evaluation, whose results were published in the *New England Journal of Medicine* in 2004. This point prevalence project, conducted in June 2007, aimed to assess fluid resuscitation practice in Intensive Care patients in as many countries as possible worldwide to:

- Document current practice in fluid resuscitation
- Determine identifiable patient characteristics that influence choice of fluid
- Determine whether there are identifiable regional or national variations in choice of resuscitation fluid not explained by patient characteristics

*Clinical Excellence Commission and Intensive Care Coordination and Monitoring Unit (ICCMU) Research*

The Central Venous Line associated bacteraemia in ICU (CLAB-ICU) or CLAB project

builds on work commenced through the 'Safer Systems Save Lives' Project. Designed to reduce Central Venous Catheter blood stream infections in Intensive Care Units across NSW, CLAB is being conducted by the Clinical Excellence Commission in collaboration with the Intensive Care Coordination and Monitoring Unit (ICCMU) and with the assistance of the NSW Department of Health Quality and Safety Branch.

*Pharmacology and Industry Sponsored Research*

*CAPTivate*, a study that aimed to evaluate the safety and efficacy of Tifacogin (Recombinant Tissue Factor Pathway Inhibitor) administration in patients with severe Community-Acquired Pneumonia, has just completed recruitment in the latter part of 2008. Results from the study should be available mid-2009.

*PROWESS SHOCK* investigates the safety and efficacy of Drotrecogin Alfa (activated) in adult patients with severe septic shock commenced at the Canberra Hospital in October 2008.

*ART - 123* examines the safety and efficacy of Recombinant Human Thrombomodulin in patients with sepsis and disseminated intravascular coagulation.



*Intensive Care Unit Generated Research  
Recognition of the Deteriorating Patient*

A prospective controlled trial of effect of the use of the Modified Early Warning Score on Morbidity and Mortality Rates

Principal Investigators: Dr Imogen Mitchell, Mr Chris Van Leuvan, ANU Medical School; Ms Heather McKay, Patient Safety and Quality Unit, ACT Health; Ms Judy Gosper, Patient Safety and Quality Unit, ACT Health; Dr Tracey Bessel, Patient Safety and Quality Unit, ACT Health

Research Grant: ACT Health Project Grant received

*Inspiratory Muscle Training*

A randomised trial of inspiratory muscle training as an adjunct to ventilatory weaning in prolonged mechanical ventilation.

Principal Investigators: Ms Bernie Bissett Senior Physiotherapist; Dr Anne Leditschke

Research Grant: Allied Health Scholarship (\$5000) received.

*Acute Renal Failure in Critical Illness*

An audit of acute renal failure in critical illness, with a focus on contrast nephropathy.

Principal Investigator: Dr Anne Leditschke

*Burnout: Experiences of Emotional Exhaustion in Critical Care Nurses*

This research aims to highlight the awareness of burnout, which is essential to recognize symptoms and prevent it from occurring. Formulated strategies, resulting from this project may help, minimise and prevent emotional exhaustion (burnout).

Principal Investigator: Lola Kurimalawai

*Cortisol Physiology in Critical Illness*

An observational study of cortisol physiology in critical illness.

Principal Investigators: Dr Anne Leditschke; Associate Professor Peter Hickman, Director of Chemical Pathology; Professor Julia Potter, Director of Pathology

*Intramedullary Pressure Monitoring in Long Bone Instrumentation*

Investigation of the effects of monitoring and controlling intramedullary pressure in long bone instrumentation in a sheep model.

Principal Investigators: Dr Paul Smith, Trauma and Orthopaedic Research Unit; Dr Rachel Li, Trauma and Orthopaedic Research Unit; Dr Anne Leditschke

*Impact of a Pandemic Triage Tool on Intensive Care Admissions*

Considers impact of a pandemic triage tool on intensive care admissions.

Principal Investigators: Mr Andrew Bailey; Mr Jamie Ranse; Dr Anne Leditschke

*Lymphopenia in Critically Ill Trauma Patients*

Lymphopenia has been described as a marker of sepsis. This study investigates the frequency of lymphopenia in non-septic trauma patients.

Principal Investigators: Professor Peter Collignon, Department of Infectious Diseases and Microbiology; Dr Karina Kennedy, Department; Dr Anne Leditschke

## PUBLICATIONS

Mitchell IA, Antoniou B, Gosper JL, Hurwitz MD, Mollett J, Bessel TL. A robust clinical review process: A catalyst for clinical governance in an Australian Teaching hospital. *Med J Australia* 2008; 189: 451–455

Van Leuvan C, Mitchell I. Are all vital signs equally vital? *Critical Care & Resuscitation*. 2008; 10: 111–15

Mitchell I, Van Leuvan C, Avar B, Slater N, Berry R, Lamberth P, McKay H. Early Recognition of the Deteriorating Patient Reduces Unplanned admissions to the intensive care unit. *Intensive Care Medicine* 2008; 34 (Supplement 1): S95

Ranse J, Arbon P. Graduate nurses' lived experience of in-hospital resuscitation – a hermeneutic phenomenological approach. *Australian Critical Care*. 2008;21:38–47

Arbon P, Zeitz K, Ranse J, Wren H, Driscoll K, Elliott R. The reality of multiple casualty triage: putting triage theory into practice at the scene of multiple casualty vehicular accidents. *Emergency Medicine Journal*. 2008;25:230–234

Ranse J, Aitken C. Preparing and presenting a successful poster at a scientific conference. *Journal of Emergency Primary Health Care*. 2008;6:1–10

Karakozov M, Nikolic G. A matter of balance. *Heart & Lung*. 2007;36:383–384

Karakozov M, Nikolic G. Spiky ventricular tachycardia. *Heart & Lung*. 2007;36:304–306

Karakozov M, Nikolic G. Wenckebach variant. *Heart & Lung*. 2007;36:85–86

Bissett B, Leditschke IA. Inspiratory muscle training to enhance weaning from mechanical ventilation. *Anaesthesia Intensive Care*. 2007;35:776–779

Smith P, Leditschke A, McMahon D, Sample R, Perriman D, Prins A; Brüssel T, Li R. Monitoring and Controlling Intramedullary Pressure Increase in Long Bone Instrumentation: a Study on Sheep. *Journal of Orthopaedic Research* 2008;26:1327–33

## PRESENTATIONS/ABSTRACTS

Mitchell I, Van Leuvan C, Avard B, Slater N, Berry R, Lamberth P, McKay H. Early Recognition of the Deteriorating Patient Reduces Unplanned admissions to the intensive care unit. *European Society of Intensive Care Annual Meeting Lisbon*, September 2008

Bailey A, Leditschke A, Ranse J, Grove K. Impact of a pandemic triage tool on intensive care admissions [abstract]. *Critical Care*. 2008;12(s2):P349

Ranse J. Future Directions, Future Challenges ... Beyond Tomorrow. 6th International Conference for Emergency Nurses. Melbourne, Victoria, Australia. 11–13 October 2007 *Journal of Emergency Primary Health Care* [conference report]. 2007;5(4)

Arbon P, Zeitz K, Ranse J, Wren H, Driscoll K, Elliott R. The realities of triage. *Australasian Emergency Nursing Journal*. 2007;10(4):210

Ranse J. Graduate nurses' lived experience of in-hospital resuscitation – a hermeneutic phenomenological approach, *Australasian Emergency Nursing Journal*. 2007;10(4):224–225

Ranse J, Arbon P, Zeitz K, Wren H, Driscoll K, Elliott R. Putting triage theory into practice at the scene of multiple casualty vehicular accidents: the reality of multiple casualty triage. *Journal of Prehospital and Disaster Medicine*. 2007;22(2):s71

Ranse J. In-hospital resuscitation: graduate nurses' lived experience in the non-critical care environment – a hermeneutic phenomenological approach [abstract]. ACT Health, Nursing and Midwifery, 2nd Compendium of Research and Evidence Based Practice. 2007

Mitchell I, Van Leuvan C, Avard B, Slater N, McKay H. Recognising the deteriorating patient reduces unplanned ICU admissions *Anaesthesia and Intensive Care* 2007; 36 (6): 1007

Ranse J. Medical emergency teams: graduate nurses interactions, attitudes and perceptions during resuscitation events in the non-critical care environment [abstract]. *Australian Critical Care*. 2008;21(1):54

Ranse J, Taylor N. Mountain biking events: presentation characteristics and medical needs; paper presented at the 8th Rural Critical Care Conference. Batemans Bay, Australia, 23rd August 2008

Ranse J, Hayes C. Casualties referred to hospital by volunteer first aiders: a retrospective analysis of casualty presentations; paper presented at the St John Ambulance Australia National Conference, Adelaide, Australia, 20th June 2008

Ranse J, Taylor N. Medical needs at the world largest mountain biking event; paper presented at the St John Ambulance Australia National Conference, Adelaide, Australia, 20th June 2008

Ranse J, Carter S. Engaging volunteers in emergency services: the St John Ambulance Australia perspective; paper presented at the St John Ambulance Australia National Conference, Adelaide, Australia, 20th June 2008

Bailey A, Leditschke A, Ranse J, Grove K. Impact of a pandemic triage tool on intensive care admissions; poster presented at the 28th International Symposium on Intensive Care and Emergency Medicine. Brussels, Belgium, 18th–21st March 2008

Mitchell I. Early recognition of the deteriorating patient reduced unplanned ICU admissions; paper presented at the ANZICS/ACCCN Intensive Care Annual Scientific Meeting, Rotorua, New Zealand, 27th October 2007

Leditschke IA. Dead is Dead. Invited presentation at 'Why Organ Donation? – a seminar for health professionals' Parliament House, Canberra, 15th October 2007

Australasian Emergency Nursing Journal, Editorial Board (in  $\alpha$  order Considine J, Donkin-Evers B, Gerdtz M, Holzhauser K, Ranse J, Shaban R). Writing for Publication; workshop facilitator at the 6th International Conference for Emergency Nurses, Melbourne, Australia, 10th October 2007

Ranse J. Medical emergency teams: graduate nurses interactions, attitudes and perceptions during resuscitation events in the non-critical care environment; paper presented at the ANZICS/ACCCN Intensive Care Annual Scientific Meeting, Rotorua, New Zealand, 26th October 2007

Ranse J, Arbon P, Zeitz K, Wren H, Driscoll K, Elliott R. The realities of triage; paper presented at the 6th International Conference for Emergency Nurses, Melbourne, Australia, 12th October 2007

Ranse J. Graduate nurses' lived experience of in-hospital resuscitation – a hermeneutic phenomenological approach, poster presented at the 6th International Conference for Emergency Nurses, Melbourne, Australia, 12th October 2007

Ranse J. Exploring the volunteer first aiders' experience post-resuscitation; paper presented at the St John Ambulance Australia National Conference, Canberra, Australia, 22nd June 2007

Arbon P, Zeitz K, Ranse J, Wren H, Driscoll K, Elliott R. Multi-casualty triage – putting triage theory into practice at the scene of multiple casualty vehicular accidents; paper presented at the 15th World Congress on Disaster and Emergency Medicine, Amsterdam, the Netherlands, 14th May 2007

## AWARDS

Mitchell I. Guan Chong Award for Best Clinical Oral Presentation. Canberra Region Annual Scientific Meeting and ASMR Young Investigator Forum. Early recognition of the Deteriorating Patient reduces unplanned admissions to the intensive care unit.

Ranse, J. Best poster presentation. 6th International Conference for Emergency Nurses. Graduate nurses' lived experience of in-hospital resuscitation – a hermeneutic phenomenological approach.

# CANBERRA HOSPITAL

## Medical Imaging

### STAFF

Prof Graham Buirski, Director Medical Imaging Canberra Hospital. Professor of Radiology ANU Medical School

Dr Rajeev Jyoti, Deputy Director (Academic) Medical Imaging. Clinical Senior Lecturer Radiology ANU Medical School

A/Prof Ross O'Neil, Supervisor of Training, RANZCR, Clinical A/Prof Radiology ANU Medical School

### STUDENT

Dr Yi Song Wong, Advanced trainee in vascular and interventional Radiology

### CURRENT RESEARCH PROJECTS

A diffusion tensor magnetic resonance imaging (DT-MRI) study of depression and cognition in type 2 diabetics: a pilot study. Research proposal in submission, pending review outcome. Dr R Jyoti. Collaboration: Department of Psychological Medicine and Endocrinology the Canberra Hospital

Ultrasound assessment of brachial artery in patients on low carbohydrate diet. Double blind RCT. Data collected. Writing up. Dr R Jyoti. Collaboration: Department of Gastroenterology the Canberra Hospital

General practice based musculoskeletal pain imaging plan. Dr R Jyoti. A research project in planning for grant submission to NHMRC. The specificity and sensitivity of ultrasound in identifying the medial collateral ligament of the ankle in patients with Weber b and C fractures. Buirski G, Orifice R, Scarvell J, Smith P. Collaboration: Orthopaedics department the Canberra Hospital

Prevention of secondary fractures in people attending fracture clinic. Smith P, Fisher A, Buirski G, Scarvell J, O'Brien E. Collaboration: Orthopaedics and geriatrics department the Canberra hospital

### FUNDING

Private Practice Fund the Canberra Hospital grant of \$15,200.00. Size of kidneys in premature infants (SKIPI study). Dr R Jyoti, A/Prof A. Kent, Dr M Falk

### PUBLICATIONS

Does Extreme prematurity affect kidney volume at term corrected age? Kent AL, Jyoti R, Robertson C, Gonsalves L, Meskell S, Shadbolt B, Falk MC. *J Matern Fetal Neonatal Med.* 2009 May;22(5):435–8

Early diffusion-weighted magnetic resonance imaging findings in neonatal herpes encephalitis. Dhawan A, Kecskes Z, Jyoti R, Kent AL. *J Paediatr Child Health.* 2006 Dec;42(12):824-6

Predicting outcome in term neonates with hypoxic-ischaemic encephalopathy using simplified MR criteria. Jyoti R, O'Neil R, Hurrion E. *Pediatr Radiol.* 2006 Jan;36(1):38–42. Epub 2005 Nov 12. Erratum in: *Pediatr Radiol.* 2007 Feb;37(2):243. Hurrion, Elizabeth [added].

Fatal brainstem encephalitis in an infant/newborn caused by coxsackie B virus. Brecht M, Jyoti R, McGuire W. Submitted for publication in *Paediatric Infectious disease Journal*

## PRESENTATIONS/ABSTRACTS

Kent AL, Jyoti R, Robertson C, Gonsalves L, Meskell S, Shadbolt B, Falk MC. Are renal volumes measured by magnetic resonance imaging and three-dimensional ultrasound in the term neonate comparable?

Accepted abstract for the 13th Annual Congress of The Perinatal Society of Australia and New Zealand (PSANZO9), to be held at the Darwin Convention Centre, Northern Territory.

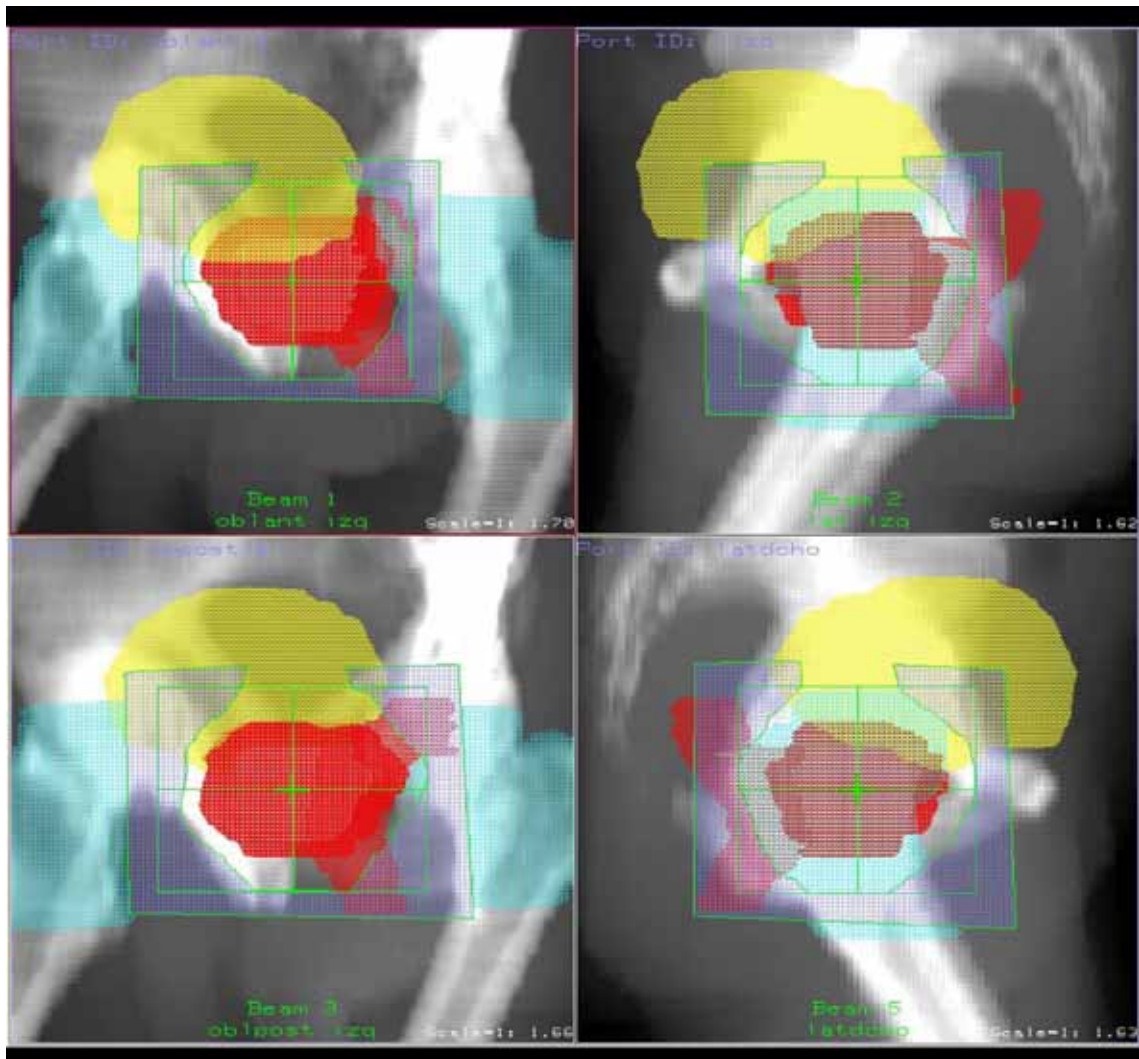
Kent AL, Jyoti R, Robertson C, Gonsalves L, Meskell S, Shadbolt B, Falk MC. Does extreme prematurity affect kidney volume at term corrected age?

Accepted abstract for the 13th Annual Congress of The Perinatal Society of Australia and New Zealand (PSANZO9), to be held at the Darwin Convention Centre, Northern Territory

Jyoti R, Wong Yii Song  
Cost effective use of MR Urography in Evaluation of complex renal tract conditions- a pilot study. Published abstract in Journal of medical Imaging and radiation Oncology  
Poster presentation RANZCR 2005

Rao Prashanth, Jyoti R, Khurana G, Kirk H  
MR spectroscopy: A tool in guiding the management of diagnostically difficult intracranial masses.

Oral presentation NSA conference 2007



# CANBERRA HOSPITAL

## Neonatology

### STAFF

Assoc Professor Zsuzsoka Kecskes

Assoc Professor Alison Kent

Dr David Todd CMO, Department of Neonatology

Assoc Prof William McGuire

Mrs Margaret Broom, Research Nurse, Department of Neonatology

Dr Manbir Chauhan, Previous Fellow Neonatal Unit, Department of Neonatology

Ms Kelly Cameron, Neonatal Nurse, Department of Neonatology

Dr Sascha Meyer, Previous Fellow Neonatal Unit, Department of Neonatology

Dr Blessy Charles, Current Fellow Neonatal Unit, Department of Neonatology

### STUDENTS

Ms B Schiller, PhD student (Co-supervisor with Prof R Martin) at School of Biochemistry and Molecular Biology ANU

ANU Medical Student Research Projects

Ms Carly Neller

Ms Jennifer Porteus

Mr Alex Dillon

Ms G Riley

Ms M Stilianos

Ms K Barrett

Ms P Moore

Ms M Maddock

Mr T Gleeson

Ms Bianca Preo

Ms Hui Ying Chow

Ms Deborah Moran



Cathy Ringland, Associate Professor Zsuzsoka Kecskes, Dr David Todd, Margaret Broom

## COLLABORATIVE ASSOCIATES

Professor John Bertram, Head, Department of Anatomy and Developmental Biology, Monash University, Melbourne, Australia

Rebecca Douglas-Denton, Department of Anatomy and Developmental Biology, Monash University, Melbourne, Australia

Dr Mary Jane Black, Monash University, Melbourne

Prof Jane Dahlstrom, Dept of Anatomical Pathology, Canberra Hospital

Dr Mark Koina, Dept of Anatomical Pathology, Canberra Hospital

Linda Brown, Dept of Anatomical Pathology, Canberra Hospital

Prof David Ellwood, Dept of Obstetrics and Gynaecology, Canberra Hospital

Assoc Prof Chris Nolan, Dept of Endocrinology, Canberra Hospital

Dr Michal Falk, Dept of Nephrology, Canberra Hospital

Dr Rajeev Jyot, Dept of Medical Imaging, Canberra Hospital

Dr Ross O'Neill, Dept of Medical Imaging, Canberra Hospital

Dr Gwen Allison, Dept of Microbiology, Australian National University

Prof Peter Collignon, Dept of Microbiology and Infectious Diseases, Canberra Hospital

Dr Bruce Shadbolt, Clinical Epidemiology Unit, Canberra Hospital

Professor Rosemary Martin, School of Biochemistry and Molecular Biology (BAMBI), Australian National University

Professor Paul Colditz, Perinatal Research Centre, School of Medicine, University of Queensland

Dr Barbara Lingwood, Perinatal Research Centre, School of Medicine, University of Queensland

A/Prof David Croaker, Paediatric Surgery, Australian National University Medical School

Audrey Wright & Dr Marilyn Rochefort, Westmead Hospital, Westmead, Sydney, NSW

Dr Luke Jardine & Dr Alice Stewart, Royal Brisbane and Women's Hospital, QLD

Dr Srinivas Ramakrishnan, John Hunter Hospital, Newcastle, NSW

Prof Marjan Kljakovic & Ms Karen Ciszek, ANU Medical School Canberra

Dr Laurel Teoh, Paediatrics, Canberra Hospital

Mr Mat Harris & Mr Christian Saville, Fisher and Paykel Health Care

## RESEARCH PROJECTS

Bacterial PRIMers, Neonatal Infection and Premature Labour (PRIMIP Study). Assoc Prof Kent, Drs W Seliem, G Allison, P Collignon, D Ellwood, JE Dahlstrom

To compare bacterial primers with current microbiological techniques for determining infections in premature labour and the early neonatal period

The role of glucolipotoxicity in the pathogenesis of diabetic fetopathy (GLTxIP study). A/Prof C Nolan, Prof JE Dahlstrom, Dr P Scott, Ms Kugathas & Assoc Prof Kent

To Examine the effect of glucolipotoxicity in pregnancy on the placenta and the subsequent fetus and neonate

Study of indomethacin and ibuprofen and glomerular development in an animal model (SING II study). Assoc Prof Kent, Dr MC Falk, Prof JE Dahlstrom, Dr M Koina, Dr D Willenborg, Prof John Bertram, R Douglas-Denton

Further study to determine whether indomethacin and ibuprofen impair glomerular development during glomerulogenesis.

Glomerular Urinary Podocytes in Premature Infants (GUPPI study). Assoc Prof A Kent, Prof JE Dahlstrom, Dr L Brown

To determine whether administration of indomethacin or gentamicin results in glomerular injury in the premature neonate as evidenced by excretion of podocytes in the urine

Post mortem glomerular study of premature neonates. Assoc Prof A Kent, Prof JE Dahlstrom, Dr MJ Black, Prof J Bertram.

To determine whether extreme prematurity and exposure to a number of insults can decrease the number of glomeruli

Renin and aldosterone levels in neonates (RENAL study). Assoc Prof A Kent, Prof Jane Dahlstrom, Assoc Prof Chris Nolan, Dr Peter Hickman. To determine whether maternal hypertension and diabetes results in elevated neonatal renin and aldosterone levels and blood pressure.

Predicting neonatal and infant morbidity after perinatal hypoxic-ischaemic injury. In this multi-centre study, prospectively collected data will be analysed and scoring systems used for predicting long-term outcome applied to the dataset to determine, which system is most predictive.

Amplitude integrated EEG (aEEG) as a monitoring tool in neonatal stroke. The use of aEEG for neonates has mainly focussed on definition of brain damage after asphyxia. In this study, the value of aEEG in defining abnormalities after neonatal stroke is assessed.

Normative values for passage of meconium in preterm and term infants. This collaborative study evaluates time to first passage of meconium in neonates to gather normative data. Results of this study will guide clinicians in determine which infants need further investigations for Hirschsprung's disease.

Cerebral impedance following hypoxia/ ischaemia in the human infant. Impedance measurements are mainly known for assessment of fluid status in adults. In this multi-centre trial, cerebral impedance is measured and correlated with long-term neurological outcome in babies following perinatal asphyxia.

Effects of early discharge of premature infants on parent satisfaction. The Centre for Newborn Care has instigated an early discharge program, in which parents are trained to do gastric feeding by gavage of their premature infant in the home environment. This quality assurance project investigates parental satisfaction with this program.



Dr David Knight and Margaret Broom

Effect of home gavage feeding of premature infants on short-term outcomes. The Centre for Newborn Care has instigated an early discharge program, in which parents are trained to do gastric feeding by gavage of their premature infant in the home environment. This quality assurance project investigates safety and short-term outcomes of this program.

Oxygen for resuscitation of preterm infants. Traditionally neonates are resuscitated with 100% oxygen. Recommendations for term infants now state to use 21% oxygen instead as there are concerns about long-term effects of pure oxygen. The best concentration of oxygen to be used for preterm infants is unknown. As oxygen for resuscitation is blended and tailored to the needs of the baby at Canberra Hospital, this quality control project assesses the efficacy and safety of this practice.

Does early extubation (<6 hours) reduce the incidence of chronic lung disease in very premature infants? Obstetric and Neonatal practice have changed dramatically over the last decade. The effects of changed practice result in shorter duration of ventilation of premature infants. This project assesses the effects of duration of ventilation (< 6hours vs. >6 hours) in babies born <28 weeks gestation at Canberra Hospital on short-term (duration of oxygen requirement, duration of CPAP) as well as long-term (need for re-intubation, CLD) outcomes.



*INIS* (International Neonatal Immunotherapy Study) A multicentre randomised trial to assess efficacy and long term outcomes of immunoglobulin in neonatal septicaemia. A two year follow up is in progress - developmental assessment continues to five years. NHMRC and UK MRC funded trial.

*CAP* (Caffeine for Apnoea of Prematurity) Multicentre - randomised trial to assess effectiveness and long term developmental outcome of caffeine used to treat apnoea in preterm infants. A five year follow up is in progress. Canadian and Australian NHMRC funded trial.

*BOOSTII* (the Benefits of Oxygen Saturation Targeting Study) A comparative study which examines exposure of severely premature infants (< 28wks) to lower and higher oxygen levels. Developmental follow-up to be conducted at two years - funded by NHMRC.

#### Training in Cochrane methodology

Methods of weaning CPAP in infants <30 weeks gestational age: A multicentre randomised controlled trial.

- Canberra Hospital Co-ordinating centre: Dr David Todd, Mrs Margaret Broom, Ms Kelly Cameron, Dr Mambir Chauhan, Dr Bruce Shadbolt
- Westmead Hospital Sydney: Mrs Audrey Wright, Mrs Carol Cameron, Dr Marilyn Rochefort
- Royal Brisbane and Women's Hospital: Dr Luke Jardine, Dr Alice Stewart, Sandy Meskell

Inspired Humidity and temperature with the Stephanie Ventilator

- Ms Bianca Preo (Med student), Dr David Todd, Dr Bruce Shadbolt

Inspired Humidity and temperature with the F&P MR850

- Dr David Todd, Mr Mat Harris, Mr Christian Saville

Inspired humidity and temperature with the WILAm PMH 5000 humidifier

- Ms Hui Ying Chow (Med Student), Dr David Todd

The Placement of central lines and endotracheal tubes in neonates <30 weeks gestation

- Ms Deborah Moran (ANU Med Student), Dr David Todd

Pulmonary follow up survey in preterm infants < 29 weeks gestation in conjunction with the ACT Kindergarten Asthma and allergies survey ANU Medical School.

- Dr David Todd, Cathy Ringland, Margaret Broom, Dr Blessy Charles, Prof Marjan Kljakovic, Ms Karen Ciszek, Dr Laurel Teoh

Non-invasive cardiac Output study using the USCOM monitor in preterm infants <36 weeks gestation

- Dr David Todd, Dr Sascha Meyer, Dr Bruce Shadbolt

## FUNDING

### 2006

The Canberra Hospital Private Practice Trust Fund: \$37,203.28; CPAP weaning trial.

The Canberra Newborn Intensive Care Foundation: \$2,200.00; Perpetual Treonic licence for CPAP weaning trial.

### 2007

The Canberra Hospital Private Practice Trust Fund: \$9,900.00; USCOM cardiac output monitor trial.

The Canberra Newborn Intensive Care Foundation: \$2,500.00; Humidity and Temperature probe.

Study of indomethacin and ibuprofen on glomerular development in an animal model. Royal Australasian College of Physicians - Covance Fellowship. \$20,000 (PI - A Kent) AL Kent, JE Dahlstrom, J Bertram, R Douglas-Denton, M Koina, B Shadbolt, MC Falk.

### 2008

Study of indomethacin, ibuprofen and gentamicin on glomerular development in a neonatal rat model The Canberra Hospital Private Practice Fund. \$93,715 (PI - A Kent) AL Kent, JE Dahlstrom, J Bertram, R Douglas-Denton, M Koina, B Shadbolt, MC Falk.

Renin and Aldosterone in neonates (RENAL study). The Canberra Hospital Private Practice Fund. \$16,500 (PI - A Kent) AL Kent, D Ellwood, P Hickman, C Nolan, JE Dahlstrom.



## PUBLICATIONS

Francis B, Kecskes Z, Hallam L, Ellwood D, Croaker D, Kent AL. Placental Mesenchymal Dysplasia Associated with Hepatic Mesenchymal Hamartoma in the Newborn. *Pediatr Dev Pathol* 2007, 10: 50–54

Kent AL, Casey A, Lui K. for the NSW and ACT Borderlines of Viability Consensus Workshop Committee – Collaborative decision making for extreme premature delivery. *J Pediatr Child Health*. 2007, 43: 489–491

Kent AL, Kecskes Z, Shadbolt B, Falk MC. – Blood pressure readings in term neonates in the early neonatal period. *Pediatr Nephrol* 2007, 22: 1335–1341

Kent AL, Maxwell L, Koina M, Falk MC, Willenborg D, Dahlstrom JE. Renal glomeruli and tubular injury following indomethacin and ibuprofen exposure in a neonatal rat model. *Pediatr Res* 2007, 62: 307–312

Kent AL, Kecskes Z, Shadbolt B, Falk MC. – Blood pressure in the first year of life in healthy infants born at term. *Pediatr Nephrol* 2007, 22: 1743–1749

Seliem W, Shadbolt B, Falk MC, Kent AL - Antenatal and postnatal risk factors for neonatal hypertension and infant follow-up. *Pediatr Nephrol* 2007, 22: 2081–2087

Kent AL & Williams J. Increasing ambient operating theatre temperature and plastic wrap increases admission temperature in the premature infant. *J Paediatr Child Health*. 2008, 44: 325–331

Bhola K, Al-Kindi H, Fadia M, Kent AL, Collignon P, Dahlstrom JE. Placental cultures in the era of peri-partum antibiotics. *ANZJOG*. 2008, 48: 179–84

Sedaghat N, Ellwood D, Brussel T, Shadbolt B, Falk MC, Kent AL. Effect of maternal anaesthesia and mode of delivery on neonatal blood pressure. *ANZJOG*. 2008, 48:172–8

Kent AL, Meskell S, Falk MC, Shadbolt B. Normative blood pressure data in non-ventilated premature neonates 28–36 weeks gestation. *Pediatr Nephrol* 2008, In Press

Croaker GD, Pearce R, Li J, Nahon I, Javaid A, Kecskes Z. Idiopathic slow transit constipation is rare. But delayed passage of meconium is common in the constipation clinic. *Pediatr Surg Int*. 2007;23:1153–9

Ringland CP. Posttraumatic stress disorder and the NICU graduate mother, *Infant* 2008; 4 (1):

Bombell S, McGuire W. Tumour necrosis factor (-308A) polymorphism in pre-eclampsia: meta-analysis of 16 case-control studies. *Aust N Z J Obstet Gynaecol*. 2008;48:547–51

- Chauhan M, Bombell S, McGuire W. Tumour necrosis factor (-308A) polymorphism in very preterm infants with broncho-pulmonary dysplasia: meta-analysis. *Arch Dis Child Fetal Neonatal Ed.* 2008 Dec 9
- Brecht M, Clerihew L, McGuire W. Prevention and treatment of invasive fungal infection in very low birthweight infants. *Arch Dis Child Fetal Neonatal Ed.* 2009;94:F65–9
- Chaudhari T, McGuire W. Allopurinol for preventing mortality and morbidity in newborn infants with suspected hypoxic-ischaemic encephalopathy. *Cochrane Database Syst Rev.* 2008 16;(2):CD006817
- Bombell S, McGuire W. Delayed introduction of progressive enteral feeds to prevent necrotising enterocolitis in very low birth weight infants. *Cochrane Database Syst Rev.* 2008 16;(2):CD001970
- McGuire W, Bombell S. Slow advancement of enteral feed volumes to prevent necrotising enterocolitis in very low birth weight infants. *Cochrane Database Syst Rev.* 2008 16;(2):CD001241
- Chauhan M, McGuire W. Interleukin-6 (-174C) polymorphism and the risk of sepsis in very low birth weight infants: meta-analysis. *Arch Dis Child Fetal Neonatal Ed.* 2008;93:F427–9
- Bombell S, McGuire W. Cytokine polymorphisms in women with recurrent pregnancy loss: meta-analysis. *Aust N Z J Obstet Gynaecol.* 2008;48:147–54
- Tubman TR, Thompson SW, McGuire W. Glutamine supplementation to prevent morbidity and mortality in preterm infants. *Cochrane Database Syst Rev.* 2008;23:CD001457
- McGuire W. Re: Amplitude-integrated electroencephalography in infants with neonatal encephalopathy. *J Paediatr Child Health.* 2008;44:84
- Meyer S, Gortner L, McGuire W, Baghai A, Gottschling S. Vasopressin in catecholamine-refractory shock in children. *Anaesthesia.* 2008;63:228–34
- Chauhan M, Henderson G, McGuire W. Enteral feeding for very low birth weight infants: reducing the risk of necrotising enterocolitis. *Arch Dis Child Fetal Neonatal Ed.* 2008;93:F162–6
- Verner A, Craig S, McGuire W. Effect of taurine supplementation on growth and development in preterm or low birth weight infants. *Cochrane Database Syst Rev.* 2007 17;(4):CD006072
- Henderson G, Fahey T, McGuire W. Multicomponent fortification of human breast milk for preterm infants following hospital discharge. *Cochrane Database Syst Rev.* 2007 17;(4):CD004866
- Henderson G, Fahey T, McGuire W. Nutrient-enriched formula milk versus human breast milk for preterm infants following hospital discharge. *Cochrane Database Syst Rev.* 2007; 17;(4):CD004862
- Bhola K, McGuire W. Does avoidance of breast feeding reduce mother-to-infant transmission of hepatitis C virus infection? *Arch Dis Child.* 2007 ;92:365–6
- Grover Z, Tubman R, McGuire W. Glutamine supplementation for young infants with severe gastrointestinal disease. *Cochrane Database Syst Rev.* 2007 24;(1):CD005947
- Todd DA, Wright A, Smith J. & the NICUS Network. Retinopathy of prematurity in infants <30 weeks' gestation in NSW and the ACT from 1992-2002.; *Arch. Dis. Child. Fetal Neonatal Ed.* 2007; 92: 251–254
- Meyer S, Todd DA, Wright I, Gortner L, Reynolds G. Review article: Non-invasive assessment of cardiac output with portable continuous wave Doppler ultrasound (USCOM). *Aust. Emerg. Journal.* 2008  
doi:10.1111/j.1742-6723.2002.01078
- Todd DA, Sebastian S, Ross O, Watkins S, Clarke G, Postle AD, Marsh M.J. Surfactant Phospholipid, surfactant proteins, and inflammatory markers in the bronchoalveolar lavage fluid from children who develop acute lung injury. *Pediatric Crit Care Med.* 2008 In Press
- Todd DA, Smith J. Incidence and Treatment of Severe ROP; Letter to the editor: *Arch. Dis. Child. Fetal Neonatal Ed.* 2008 in Press

## PRESENTATIONS/ABSTRACTS

Kent AL, Dahlstrom JE, Ellwood D. Postmortem and placental pathology in perinatal deaths. PSANZ, Melbourne, Australia, 2007

Kent AL, Maxwell L, Koina M, Falk MC, Willenborg D, Dahlstrom JE. Antenatal administration of indomethacin and ibuprofen. PSANZ, Melbourne, Australia, 2007

Kent AL, Maxwell L, Koina M, Falk MC, Willenborg D, Dahlstrom JE. Postnatal administration of indomethacin and ibuprofen. PSANZ, Melbourne, Australia, 2007

Kent AL, Kecskes Z, Shadbolt B, Falk MC. Blood pressure readings in term neonates – normative values in the current era. PSANZ, Melbourne, Australia, 2007

Kent AL, Williams J. Increasing ambient room temperature in the operating theatre and plastic wrap improves admission temperature in premature infants. ESPR, Prague, Czechoslovakia, 2007

Kent AL, Kecskes Z, Shadbolt BS, Falk MC. Blood pressure in the first year of life in healthy infants born at term. ESPR, Prague, Czechoslovakia, 2007

Seliem W, Shadbolt BS, Falk MC, Kent AL. Antenatal and postnatal risk factors for neonatal hypertension and infant follow-up. ESPR, Prague, Czechoslovakia, 2007

De Cure N, Myers R, Shadbolt B, Kent AL. Time to regain birth weight as a predictor of poor somatic growth at discharge in extremely premature infants. PSANZ, Gold Coast, Australia, 2008

Kent AL, Shadbolt B, Hu E, Meskell S, Falk MC, Dahlstrom JE. Does maternal disease state affect blood pressure in the early neonatal period. PSANZ, Gold Coast, Australia, 2008

Kent AL, Dahlstrom JE, Bourne M, Freebairn L, Ellwood DA for the ACT Perinatal Mortality Committee. Perinatal mortality in the ACT – A 5-year review. PSANZ, Gold Coast, Australia, 2008

Kent AL, Maxwell LE, Koina ME, Falk MC, Willenborg D, Dahlstrom JE, Shadbolt B, Douglas-Denton R, Bertram JF. Effect of indomethacin, ibuprofen and gentamicin on glomerular number in a neonatal rat model. PSANZ, Gold Coast, Australia, 2008



Sedaghat N, Ellwood DA, Shadbolt B, Kecskes Z, Falk MC, Brussel T, Kent AL. The effect of mode of delivery and anaesthesia on neonatal blood pressure. PSANZ, Gold Coast, Australia, 2008

Kent AL, Shadbolt B, Hu E, Meskell S, Falk MC, Dahlstrom JE. Does maternal disease state affect blood pressure in the early neonatal period. The Canberra Region Annual Scientific Meeting, Canberra, Australia, 2008

Kent AL, Maxwell LE, Koina ME, Falk MC, Willenborg D, Dahlstrom JE, Shadbolt B, Douglas-Denton R, Bertram JF. Effect of indomethacin, ibuprofen and gentamicin on glomerular number in a neonatal rat model. The Canberra Region Annual Scientific Meeting, Canberra, Australia, 2008

Kent AL, Jyoti R, Robertson C, Gonsalves L, Meskell S, Shadbolt B, Falk MC. Are renal volumes measured by magnetic resonance imaging and three-dimensional ultrasound in the term neonate comparable? The Canberra Region Annual Scientific Meeting, Canberra, Australia, 2008

Kent AL, Jyoti R, Robertson C, Gonsalves L, Meskell S, Shadbolt B, Falk MC. Does extreme prematurity affect kidney volume at term corrected age? The Canberra Region Annual Scientific Meeting, Canberra, Australia, 2008

Gubhaju, L, Stamp, L, Moore, L, Kent, AL Black, MJ. Pre-term Birth: Effects on Nephrogenesis in the Human Kidney. ANZSN Meeting, Newcastle, Australia, 2008

- Ringland CP. Posttraumatic stress disorder and the NICU graduate mother. 14–17 6th International Neonatal Nursing Conference, New Delhi, September, 2007
- Kecskes Z. New technologies in cerebral monitoring in neonates. 29th Annual Conference of the Association of Neurophysiological Technologists of Australia, Canberra, Australia, September, 13-15, 2007
- Z Kecskes, K Gardner. Amplitude integrated EEG (aEEG) as a monitoring tool in neonatal stroke. 48th Annual Meeting of the European Society for Paediatric Research, Prague, Czech Republic Spain, October 6–8, 2007
- Li J, Nahon I, Kecskes Z, Croaker GDH. Paediatric Constipation: it's not all bad diet and poor toilet training. Paediatric Colorectal Club, York, UK, July 14–16, 2007
- Lingwood BE, Healy GN, Kecskes Z, Dunster KR, Gray PH, Ward LC, Colditz PB. Cerebral impedance following hypoxia/ischaemia in the human infant. 13th International Conference on Electrical Bio-Impedance Graz, Austria, August 29-September 2, 2007
- M Stilianos, Z Kecskes. Effects of early discharge of premature infants on parent satisfaction. 12th Annual Congress of the Perinatal Society of Australia and New Zealand; 2008; April 21–24, Goldcoast, Australia
- Barrett, Kecskes Z. Effect of home gavage feeding of premature infants on short-term outcomes. 12th Annual Congress of the Perinatal Society of Australia and New Zealand; 2008; April 21–24, Goldcoast, Australia
- Ringland CP. Posttraumatic stress disorder and the NICU graduate mother. 12th Annual Congress of the Perinatal Society of Australia and New Zealand; 2008; April 21–24, Goldcoast, Australia
- Hanzic M. Education program for home gavage feeds for preterm infants. 12th Annual Congress of the Perinatal Society of Australia and New Zealand; 2008; April 21–24, Goldcoast, Australia
- Pini G. Programs that promote the initiation and maintenance of lactation for mothers of preterm and/or LBW/VLBW infants in neonatal intensive care units. 12th Annual Congress of the Perinatal Society of Australia and New Zealand; 2008; April 21–24, Goldcoast, Australia
- Z Kecskes, M Stilianos. Effects of early discharge of premature infants on parent satisfaction. 49th Annual Meeting of the European Society for Paediatric Research, Nice, France, October 24 to 28, 2008
- Kecskes Z, Barrett. Effect of home gavage feeding of premature infants on short-term outcomes 49th Annual Meeting of the European Society for Paediatric Research, Nice, France, October 24 to 28, 2008
- Todd DA, Wright A & Ramakrishnan S: Methods of weaning CPAP in infants <30 weeks gestational age: A multicentre randomised controlled trial. Fetal and Neonatal Physiology Meeting Melbourne, 2007
- Todd DA. Invited Talk: Retinopathy of prematurity (ROP): The incidence, pathophysiology and treatment. Special Care neonatal Study day. The Calvary hospital, ACT, 2007
- Todd DA, Goyen T-A, Smith J, Rochefort M. Developmental outcome of infants <29 weeks gestation in relation to severity of retinopathy of prematurity (ROP) in NSW and the ACT from 1998-2001. Presented at the DOHaD Conference, Perth 2007
- Todd DA. Breastfeeding and Necrotising enterocolitis (NEC). Invited talk: Australian Lactation Consultants Association Canberra branch annual Meeting: Canberra, Australia, 2007
- Singh P, Malviya M, Lad S, Baird J, Rochefort M, Athayde N and. Histological chorioamnionitis and antenatal steroids in infants  $\leq 28$  weeks gestational age Annual PSANZ meeting: Melbourne, Australia, 2007
- Singh P, Malviya M, Lad S, Baird J, Rochefort M, Athayde N, Todd DA. The relationship between clinical features of intra-amniotic infection and histologic chorioamnionitis in infants  $\leq 32$  weeks gestational age. Annual PSANZ meeting: Melbourne, Australia, 2007

Haskas A, Perdomo A, Wright A, Todd DA. Evaluation of the Hemocue® glucose 201 analyser in a neonatal population: Annual PSANZ meeting: Melbourne, Australia, 2007

Todd DA, Harris M and Saville C. Inspired temperature variations with the F&P MR850 humidity base. Annual PSANZ meeting: Gold Coast, Australia, 2008

Todd DA, Harris M and Saville C. Inspired humidity variations with the F&P MR850 humidity base. Annual PSANZ meeting: Gold Coast, Australia, 2008

Meyer S, Todd DA, Shadbolt B. Assessment of cardiac output with portable continuous wave Doppler ultrasound (USCOM) in the Neonatal intensive care unit. Annual PSANZ meeting: Gold Coast, Australia, 2008

Goyan T-A, Todd DA, Wright A, Rochefort M. & the NICUS Developmental outcome in relation to severity of retinopathy of prematurity (ROP): in infants <30 weeks' gestation in NSW and the ACT from 1998–2001; Annual PSANZ meeting: Gold Coast, Australia, 2008

Rochefort M, Goyan T-A, Todd DA, Wright A & the NICUS Developmental outcome in relation to severity of retinopathy of prematurity (ROP): in infants <30 weeks' gestation in NSW and the ACT from 1998–2001. Annual European Paediatric Society meeting, Lyon, France, 2008

Todd DA. NEC and the neonate. Invited talk: Special Care Neonatal Study day. The Calvary hospital, ACT, 2008

Todd DA. Breastfeeding and NEC. Invited talk: Australian Breastfeeding Association annual conference, Sydney, NSW, 2008

Todd DA, Harris M and Saville C. Inspired temperature variations with the F&P MR850 humidity base. The Canberra Annual Scientific meeting, Australia, 2008

Todd DA, Harris M and Saville C. Inspired humidity variations with the F&P MR850 humidity base. The Canberra Annual Scientific meeting, Australia, 2008



# CANBERRA HOSPITAL

## Neurology

### STAFF

Associate Professor Christian J Lueck, Head of Department and Senior Staff Specialist

Dr Andrew Hughes, Senior Staff Specialist

Dr Craig McColl, Senior Staff Specialist

Dr Chandni Das, Senior Staff Specialist

Dr Colin Andrews, Visiting Medical Officer

Dr Roger Tuck, Visiting Medical Officer

Ms Angela Borbelj, Senior Neurophysiology Technologist

Ms Kate Martin, Neurophysiology Technologist

Ms Isabel Harvey, Stroke Liaison Nurse

Dr Omar Ahmad, Advanced Trainee in Neurology

### STUDENTS

Ms Diana M Perriman, NH&MRC Dora Lush Scholar, PhD Student

Several ANU medical students have been involved with student projects

### COLLABORATIVE ASSOCIATES

Professor Richard Lindley, Department of Geriatrics, Westmead Hospital, Sydney

Professor Craig Anderson, Department of Neurology, The George Institute, Sydney

Professor Philip Bath, Department of Medicine, University of Nottingham, UK

Professor Nancy J Newman, Department of Neuro-Ophthalmology, Emory University, Atlanta, Georgia, USA

Professor Valérie Biousse, Department of Neuro-Ophthalmology, Emory University, Atlanta, Georgia, USA

Professor Elsdon Storey, Neurologist, Alfred Hospital and Monash University, Melbourne

Professor Rosemary Martin, School of Biochemistry and Molecular Biology, Australian National University, Canberra

Professor John Morris, Neurologist, Westmead Hospital, Sydney

Associate Professor Ted Maddess, Research School of Biological Sciences, Australian National University, Canberra

Associate Professor Isla M Williams, Neuro-ophthalmologist, Monash University, Melbourne

Associate Professor Andrew Neely, Department of Engineering, University of New South Wales at the Australian Defence Force Academy, Canberra

Associate Professor Paul Smith, Trauma and Orthopaedic Unit, Canberra Hospital and Australian National University, Canberra

Dr Ross O'Neil, Department of Medical Imaging, Canberra Hospital and Australian National University, Canberra

Dr Lavinia Hallam, Department of Pathology, Canberra Hospital and Australian National University, Canberra

Dr Andrew James, Research School of Biological Sciences, Australian National University

Dr Jennie Scarvell, Trauma and Orthopaedic Unit, Canberra Hospital and Australian National University, Canberra

Dr Larry Abel, Royal Victorian School of Optometry, Melbourne

Dr Elizabeth Pepper, Neurologist, Westmead Hospital, Sydney

Mr Gawn McIlwaine, Consultant Ophthalmologist, Mater Hospital, Belfast, UK

Dr Chen Ming Sheng, Neurologist, Longyan No. 1 Hospital, Fujian, China



Back row: Dr Omar Ahmad, Associate Professor Christian Lueck  
 Front row: Dr Kate Ahmad, Isabel Harvey, Tegan Meredith, Dr Yu-Yan Fang

## RESEARCH PROJECTS

The use of eye movement measurement as a potential tool to study ageing and degenerative disorders of the brain (A/Prof Christian Lueck in association with A/Prof Isla Williams and Dr Larry Abel).

*The department has a research interest in looking at changes in eye movement parameters with aging, aiming to try to develop a useful biological marker of aging and degenerative diseases.*

Multifocal visual evoked potentials in multiple sclerosis and other neurological disease (A/Prof Christian Lueck in association with A/Prof Ted Maddess and Dr Andrew James).

*The department is collaborating with the research school of biological sciences to determine whether mfVER might be a useful adjunct to, or even a replacement for, MRI in the management of multiple sclerosis and other neurological disorders. (See Presentation 20).*

The timing of anticoagulation in acute stroke presumed to result from an embolus from the heart in patients with atrial fibrillation (A/Prof Christian Lueck, Dr Andrew Hughes, Dr Omar Ahmad).

*The department is in the process of setting up a multicentre trial (ACES) to try to determine the optimum timing of anticoagulation in this setting – a common clinical problem without an evidence-based answer. (See Presentations 3 and 9).*

An audit of the management of optic neuritis by Australian and New Zealand ophthalmologists and neurologists (A/Prof Christian Lueck in association with Prof Nancy Newman, Prof Valérie Biousse and others). *This questionnaire survey was performed as part of a large-scale international study in conjunction with a group of neuro-ophthalmologists based in Atlanta, Georgia, USA. (See Publications 4 and 5, and Presentations 1,2, and 4).*

A study of neurological advanced training in Australia (A/Prof Christian Lueck in association with Prof John Morris and Dr Elizabeth Pepper). *This questionnaire survey was performed in conjunction with neurologists at Westmead Hospital, and demonstrated considerable variation in training at different sites across the country, generating discussion at a National level which will hopefully result in improved training in neurology. (See Publication 3, and Presentation 6).*



Finite element modelling of compression of the optic chiasm (A/Prof Christian Lueck in association with A/Prof Andrew Neely, Mr Gawn McIlwaine, Dr. Ross O'Neil, Dr. Lavinia Hallam and others).

*The department is involved with a group of engineers at the Australian Defence Force Academy and an ophthalmologist in Belfast, UK, looking at finite element modelling of the process of compression of the optic chiasm by tumours in an effort to understand the phenomenon better. We are also involved in related pathological and radiological studies. (See presentation 18).*

Spinocerebellar Ataxia (A/Prof Christian Lueck in association with Prof. Elsdon Storey and others).

*The department has been involved with a group in Melbourne which has described a new dominantly-inherited spinocerebellar ataxia (SCA 30). (See Publication 6, and Presentation 12).*

Investigation into thoracic kyphosis in stroke and normal aging (A/Prof Christian Lueck, Dr Andrew Hughes, in association with A/Prof Paul Smith, Dr Jennie Scarvell, Ms Diana Perriman and others).

*The department is collaborating with the Trauma and Orthopaedics Unit at the Canberra Hospital to study the development of increased kyphosis with ageing and stroke, and how this might be treated. (See presentations 16).*

The Use of Coaguchek as a tool for measuring coagulation urgently in thrombolysis patients (A/Prof Christian Lueck, Dr Andrew Hughes, Ms. Isabel Harvey).

*The department is investigating the possibly use of this tool in the emergency setting.*

Clinical Audit (A/Prof Christian Lueck, Dr Andrew Hughes, Dr Omar Ahmad, Ms. Isabel Harvey, Ms Angela Borbelj, Ms Kate Martin, in association with various medical students, registrars and Dr Chen Ming Sheng).

*The department is actively engaged in various audits looking at different aspects of the management of stroke and other neurological conditions. This has generated several presentations and publications at National and International Meetings and peer-reviewed journals. (See Publications 1 and 7, and Presentations 5, 7, 11, 13, 14).*

Case reports (A/Prof Christian Lueck, Dr Andrew Hughes, Dr. Omar Ahmad, in association with various registrars and other Canberra Hospital clinicians).

*Members of the department have presented a number of case reports to various scientific meetings, and are at various stages in the process of preparing written papers for submission to peer-reviewed journals. (See presentations 10, 15, 17, 19).*

Other Clinical Research (A/Prof Christian Lueck, Dr Andrew Hughes, Ms Isabel Harvey in association with Prof Richard Lindley, Prof Craig Anderson, Prof Philip Bath and others).

*The department is involved in several investigator-led clinical trials including IST-3, INTERACT, and ENOS. (See Publication 2, and Presentation 8).*

Pharmaceutical Company Research (A/Prof Christian Lueck, Dr Craig McColl, Dr Omar Ahmad in conjunction with the Clinical Trials Unit).

*The department is involved in a small number of clinical trials funded by pharmaceutical companies, specifically PERFORM, MAZE, CogniMS and BEGIN.*

## FUNDING

October, 2006	The Canberra Hospital Private Practice Fund	Lueck CJ	Evaluation of the management of Optic Neuritis.	\$7,999
October, 2006	NH&MRC, 457343	Lindley R, Levi C, Read S, Parsons M, Hand P, Lueck C	Project grant: The third international stroke trial.	\$210,000
January, 2007	NH&MRC Dora Lush Scholarship Grant 41027	Lueck CJ, Perriman D	Electrogoniometric measurement of kyphosis in stroke.	\$90,000
January, 2007	RSBS, Biotechnology Research Centre	Maddess T, James AC, Lueck CJ, Caetano T	Neurodegenerative Diseases and Vision.	\$156,904
January, 2007	NHMRC Development grant 418029	Maddess T, James AC, Lueck CJ	Rapid, cost-effective, diagnosis and monitoring of multiple sclerosis by novel multifocal evoked potential methods.	\$143,750
December, 2007	The Canberra Hospital Private Practice Fund	Hughes A	Kyphosis in stroke: electrogoniometric measurement and evaluation of a rehabilitation strategy.	\$34,909
September, 2008	ACT Health	Lueck CJ	The Anticoagulation in Cardioembolic Stroke (ACES) Trial.	\$45,940
December, 2008	The Canberra Hospital Private Practice Fund	Lueck CJ	Correlation of eye movements with peripheral neuromuscular parameters in health and disease.	\$65,844

## PUBLICATIONS

C Rathmalgoda, J Potter, CJ Lueck. Serum sodium valproate testing: is it appropriate? *Medical Journal of Australia* 2007;187:582–4

Part of IST group: SCOPE (Stroke Complications and Outcomes Prediction Engine) Collaborations and IST. Predicting outcome in hyperacute stroke: validation of a prognostic model in the third international stroke trial (IST3). *Journal of Neurology Neurosurgery and Psychiatry* 2008;79:397–400

CJ Lueck, J Morris, E Pepper. Job variation in Australian advanced training in neurology. *Internal Medicine Journal* 2008;38:549–558

V Biousse, O Calvetti, CD Drews-Botsch, EJ Atkins, B Sathornsumetee, NJ Newman, for the Optic Neuritis Survey Group. Management of optic neuritis and impact of clinical trials: An

international survey. *Journal of the Neurological Sciences* (2008), doi:10.1016/j.jns.2008.08.039

CJ Lueck, HV Danesh-Meyer, FJ Margrie, C Drews-Botsch, O Calvetti, NJ Newman, V Biousse. Management of acute optic neuritis: a survey of ophthalmologists and neurologists in Australia and New Zealand. *Journal of Clinical Neuroscience* 2008;15:1340–1349

E Storey, M Bahlo, M Fahey, O Sisson, C Lueck, RJM Gardiner. A new dominantly-inherited pure cerebellar ataxia, SCA 30. *J Neurol Neurosurg Psychiatr* (in press)

O Ahmad, K Ahmad, KBG Dear, I Harvey, A Hughes, CJ Lueck. Atrial Fibrillation and Anticoagulation in a Stroke Unit Population. *Internal Medicine Journal* (in press)

## PRESENTATIONS/ABSTRACTS

CJ Lueck, HV Danesh-Meyer, FJ Margrie, C Drews-Botsch, O Calvetti, NJ Newman, V Biousse. Management of acute optic neuritis: survey of ophthalmologists and neurologists in Australia and New Zealand. Poster presented at 33rd Annual meeting of North American Neuro-Ophthalmology Society, Snowbird, Utah, USA 10-15th February, 2007

CJ Lueck, HV Danesh-Meyer, FJ Margrie, C Drews-Botsch, O Calvetti, NJ Newman, V Biousse. Management of acute optic neuritis: survey of ophthalmologists and neurologists in Australia and New Zealand. Poster presented at 59th Annual meeting of the American Academy of Neurology, Boston, Ma, USA 28th April– 5th May, 2007

O Ahmad, J Mowle, A Hughes, CJ Lueck. A systematic review of the literature regarding risk: benefit and timing of anticoagulation for cardioembolic stroke in patients with atrial fibrillation. Poster presented at 59th Annual meeting of the American Academy of Neurology, Boston, Ma, USA 28th April–5th May, 2007

CJ Lueck, HV Danesh-Meyer, FJ Margrie, C Drews-Botsch, O Calvetti, NJ Newman, V Biousse. Management of acute optic neuritis: survey of ophthalmologists and neurologists in Australia and New Zealand. Poster presented at 1st Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Alice Springs, 21–25th May, 2007

O Ahmad, I Harvey, K Ahmad, A Hughes, CJ Lueck. Atrial fibrillation and anticoagulation in a stroke unit population. Poster presented at 1st Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Alice Springs, 21–25th May, 2007

C Lueck, J Morris, E Pepper. Job Variation in Australian advanced training in neurology. Poster presented at 1st Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Alice Springs, 21–25th May, 2007

O Ahmad, I Harvey, K Ahmad, A Hughes, CJ Lueck. Echocardiography in the detection of cardioembolism in a stroke unit population. Poster presented at the Annual Scientific

Meeting of the Stroke Society of Australasia, Perth, October, 2007. [Int Med J 2007;37 (supp 4):A109]

CJ Lueck, RI Lindley on behalf of the Australian IST-3 Collaborative Group. The third international stroke trial (IST-3): thrombolysis for acute ischaemic stroke. Paper presented at the Annual Scientific Meeting of the Stroke Society of Australasia, Perth, October, 2007. [Int Med J 2007;37 (supp 4):A102]

CJ Lueck, O Ahmad, A Hughes, RI Lindley. Early vs. delayed anticoagulation for cardioembolic stroke. A possible Australian academic trial? Poster presented at the Annual Scientific Meeting of the Stroke Society of Australasia, Perth, October, 2007. [Int Med J 2007;37 (supp 4):A112]

A Jadeer, A Farshid, L Hallam, CJ Lueck. Simultaneous myocardial infarction and stroke. A case report and review of the literature. Poster presented at the Annual Scientific Meeting of the Stroke Society of Australasia, Perth, October, 2007. [Int Med J 2007;37 (supp 4):A112]

N Seeto, I Harvey, A Hughes, CJ Lueck. Protocol violations in an acute stroke unit in an Australian teaching hospital. Poster presented at the Annual Scientific Meeting of the Stroke Society of Australasia, Perth, October, 2007. [Int Med J 2007;37 (supp 4):A118]

E Storey, O Sisson, M Fahey, CJ Lueck, M Bahlo, RJM Gardner. SCA 30 -A new autosomal dominant pure cerebellar ataxia – maps to chromosome 4q34.3–q35.1. Poster presented at the 60th Annual meeting of the American Academy of Neurology, Chicago, 12th–19th April, 2008. [Neurology 2008;70:A316]

P Doukas, A Hughes, J Potter, C Lueck. A retrospective audit of carbamazepine level monitoring at the Canberra Hospital. Poster presented at 2nd Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Brisbane, 19th–23rd May, 2008

S Khoury, A Borbelj, K Martin, A Hughes, C Lueck. Clinical utility of electroencephalography requests at the Canberra Hospital. Poster presented at 2nd Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Brisbane, 19th–23rd May, 2008

O Ahmad, C Ong, S Senanayake, G Buirski, CJ Lueck. Optic neuritis associated with Q fever. Case report and review of the literature. Poster presented at 17th Meeting of International Neuro-Ophthalmology Society, Napa, California, 7th–12th June, 2008

DM Perriman, JM Scarvell, A Hughes, CJ Lueck, PN Smith. Which is the best exercise to train the thoracic erector spinae? A surface EMG study. Poster presented at the Health and Medical Research in the Canberra Region Conference, Canberra, June, 2008

O Ahmad, C Ong, S Senanayake, G Buirski, CJ Lueck. Optic neuritis associated with Q fever. Case report and review of the literature. Poster presented at 24th Annual Scientific Meeting of the Neuro-Ophthalmology Society of Australia, Canberra 5th–6th September, 2008

A Neely, A Howard, S Zhang, G McIlwaine, C Lueck. Finite element modelling of the optic chiasm. Poster presented at 24th Annual Scientific Meeting of the Neuro-Ophthalmology Society of Australia, Canberra, 5th–6th September, 2008

O Ahmad, CJ Lueck. An unusual case of internuclear ophthalmoplegia. Paper presented at 24th Annual Scientific Meeting of the Neuro-Ophthalmology Society of Australia, Canberra, 5th–6th September, 2008

T Maddess, A James, R Ruseckaite, C Lueck, Danta G. Multiple sclerosis and visual evoked potentials. Paper presented at 24th Annual Scientific Meeting of the Neuro-Ophthalmology Society of Australia, Canberra, 5th–6th September, 2008

DM Perriman, JM Scarvell, A Hughes, CJ Lueck, B Ashman, PN Smith. Measurement of flexion and extension of the spine with the flexible electrogoniometer. Platform presentation at the Annual Scientific Meeting of the Australian Orthopaedic Association, Hobart, Tasmania, 12th–16th October, 2008

## AWARDS

O Ahmad, I Harvey, K Ahmad, A Hughes, CJ Lueck. Atrial fibrillation and anticoagulation in a stroke unit population. Poster presented at 1st Annual Scientific Meeting of Australian and New Zealand Association of Neurologists, Alice Springs, 21–25th May, 2007. [Int Med J 2007;37 (supp 4):A109]. *This won the ANZAN prize for best poster at the meeting.*

O Ahmad, CJ Lueck. An unusual case of internuclear ophthalmoplegia. Paper presented at 24th Annual Scientific Meeting of the Neuro-Ophthalmology Society of Australia, 5th–6th September, 2008

*This won the NOSA prize for best registrar presentation at the meeting*