

# WESTERN HEALTH RESEARCH REPORT 2009

ALLIED HEALTH  
ANAESTHETICS  
CARDIOLOGY  
DIABETES  
DRUG & ALCOHOL SERVICES  
EMERGENCY MEDICINE  
ENDOCRINOLOGY  
GASTROENTOROLOGY  
GENERAL MEDICINE  
INTENSIVE CARE  
NEURODEVELOPMENTAL CLINIC  
NEUROLOGY AND STROKE  
NURSING  
ONCOLOGY  
PHARMACY  
RHEUMATOLOGY  
SLEEP DISORDERS/  
RESPIRATORY MEDICINE  
SURGERY



**WESTERN HEALTH  
CATCHMENT AREA**

Sunshine Hospital

Western Hospital

Williamstown Hospital

**MELBOURNE**

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# ABOUT WESTERN HEALTH

Western Health is the pre-eminent provider of health services in the western metropolitan region of Melbourne. Fast becoming known as a vibrant, progressive organisation focused on achieving excellence in patient care, Western Health serves one of the most multicultural regions of Melbourne and offers an extensive range of health services to a population of approximately 700,000 people, who speak more than 100 different language dialects.

Western Health provides clinical expertise and leadership across a comprehensive range of services including pregnancy and newborn care, children's and adolescent health, gynaecology, cancer, alcohol and drug dependency, aged care, heart and kidney disease, palliative care, surgery and emergency care.

Our services are provided through three acute hospitals – Western Hospital Footscray, Sunshine Hospital, and Williamstown Hospital. In addition, Western Health delivers residential aged care services from Reg Geary House and Hazeldean Nursing Home; and drug and alcohol services from the DASWest facility.

In developing our services, we recognise that societal and environmental factors, such as poverty and pollution, contribute to a higher incidence of an ever-growing number of diseases. We are a leading advocate for improving health outcomes in the West and our involvement in life improving research focuses on the diseases and risk factors which burden our community in greater numbers than any other.

# CEO REPORT

This is a significant time for research at Western Health as we review our achievements of the last 12 months and outline our plans for the future.

We provide innovative and robust clinical research services which attract international partnerships and cutting edge research opportunities. These projects will continue to be complemented by the further growth of high calibre health and medical research led by our own local research community. Our research achievements would not be possible without the drive and passion that our leading researchers bring to their work.

Western Health has a strong research focus on chronic disease in line with the Australian Government's Designated National Research Priorities. The key areas include cardiovascular health, obesity, diabetes, cancer, asthma and chronic inflammatory conditions. Many of these diseases have a relatively high incidence in the population of the West.

Our work in chronic diseases is further enhanced through a collaborative approach with local universities and medical institutions.

Our local partnership opportunities will be further strengthened by the completion of the Teaching, Training and Research Building at Sunshine which will feature leading edge educational and research technology – housed in a building with striking state-of-the-art architectural design.

I hope you will enjoy reading about our research achievements, and plans for the future, as we translate our evidence-based research into improved practice to benefit the community we serve.



**Kathryn Cook**  
Chief Executive

It is my pleasure to present the 2008 Research Report for Western Health. The aim of the Report is to recognise and highlight the significant depth and breadth of research being undertaken at Western Health.

As you will see from the report, the amount of research being conducted across our campuses is impressive, and spans a wide range of disciplines.

The Office for Research at Western Health has two key objectives: the facilitation and promotion of high-quality research, and the provision of the necessary governance frameworks to support and maintain oversight of research activities.

The Office for Research has introduced a number of initiatives to help meet these twin objectives of facilitation and research governance. The Western Health Low Risk Human Research Ethics Panel exists to provide a means of ethical review and facilitation for low risk research projects undertaken

at Western. The Office also provides mentoring and advice to our community of researchers on a daily basis for all sorts of issues, some of which include: study design, regulatory requirements, grant submissions and ethical approval.

We also have some exciting developments planned in the future. Research Week will be held during the latter part of this year, which will again showcase the enthusiasm and quality of research at Western Health especially amongst our early career investigators. We are also in the process of implementing some research educational resources that are aimed at helping first-time researchers and researchers who wish to further their knowledge.

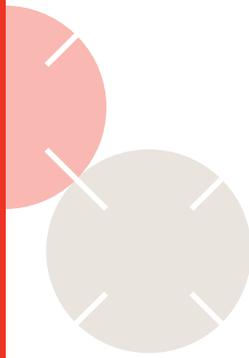
Congratulations to all those researchers whose work is represented in this report. The Office for Research looks forward to another exciting research year ahead.



**Dr. David Newman**  
Director, Office for Research

# DIRECTOR'S REPORT

# ETHICS PANEL REPORT



The Western Health Low Risk Human Research Ethics Panel was constituted in September 2008 according to the requirements of the National Health and Medical Research Council of Australia (NHMRC) guidelines. The function of this panel is to consider the ethical implications of research applications submitted to the Panel for review and to evaluate the scientific merit of the research. The Panel reviews all of all negligible and low risk research involving patients and/or staff from the Western Health Network.

Western Health has decided to manage approval of research as a three-tier process:

- 1) Quality Assurance Applications: via the Low Risk Human Research Ethics Panel.
- 2) Negligible and Low Risk Research Applications: via the Low Risk Human Research Ethics Panel.
- 3) Higher Risk Applications: via the Melbourne Health Human Research Ethics Committee.

## 2008 Membership

### Chairperson

**Debra Kerr RN MBL PhD**  
Senior Lecturer, Faculty of Nursing  
Victoria University

### Deputy Chairperson

**Edward D Janus MD PhD FRACP FRCPA**  
Professor/Director General  
Internal Medicine  
Western Health

### Secretary

**Louise Sillar B.Pharm**  
Manager, Office for Research  
Western Health

### Patient Advocate

**Shayne Smith R.N. (BA Nursing)**  
Patient Representative Western Health

### Religious Advisor

**Seikan Čech DrChineseMed(Acup)CMRB  
BHealthSc(Hons) BArch(Hons)**  
Director, Melbourne Zen Hospice

### Review Members

**Anne-Maree Kelly MD MClInEd FACEM**  
Director, Joseph Epstein Centre for  
Emergency Medicine Research,  
Western Health

**Zeff Koutsogiannis MBBS, FACEM,  
G Cert Clin Tox**  
Emergency Physician

**Kent MacMillan B.Pharm MSc**  
Director of Pharmacy  
Western Health

**Mike McDonough MBBS. G Cert Clin Tox.  
MA oDS. FACHAM(RACP)**  
Director of Addiction Medicine  
Services Western Health

**Emma Pitts BSc.(Biomedical Science) Hons**  
Clinical Trials Coordinator, WH Neurology  
BMBS Medical Student (Deakin University)

**Marc Seal BBSc (Hons) PhD**  
Griffith Research Fellow, Melbourne  
Neuropsychiatry Centre, The University of  
Melbourne & North Western Mental Health

**Jacqui Smith MBBS (Hons) M.Health Ethics,  
M.Health Law, M.Conflict Resolution, MRACMA,  
FRCOG, FRACOG, FACLM.**  
Senior Consultant O&G (Western Health),  
Senior Medical Advisor – Office of the  
Health Services Commissioner,  
Medical Director – Perinatal Emergency  
Referral Service

**Renee Testa BBSci, Grad.Dip.Psych.,  
DPsych(Neuro)**  
Senior Clinical Neuropsychologist  
and Research Neuropsychologist

**Dilanka Wanasinghe BSc**  
Sleep Disorders Scientist  
Western Health

**Martin Wright MBBS, MD, MPH, FRACP**  
Head of Unit, Child and Adolescent  
Health Western Health

The Western Health Low Risk Human Research Ethics Panel reviewed seven low risk research projects and eight quality assurance projects in the first three months of proceedings. We look forward to 2009 when the Panel will be able to continue to increase its expertise and help create further awareness of research ethics and governance at Western Health.

# 2008 RESEARCH HIGHLIGHTS

**143**

PUBLISHED JOURNAL ARTICLES

**67**

RESEARCH PROJECTS APPROVED

**25**

PUBLISHED BOOK CHAPTERS

**49**

SEMINAR AND CONFERENCE PRESENTATIONS

**15**

PRESTIGIOUS RESEARCH AWARDS

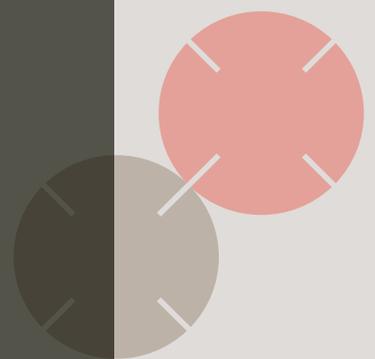
**\$2,299,218**

OF RESEARCH GRANT MONEY

**\$1,166,986**

FROM COMMERCIALY SPONSORED CLINICAL TRIALS

(08/09 FINANCIAL YEAR)





# ALLIED HEALTH

## SOPHIE HEYWOOD

Sophie Heywood is the Senior Physiotherapist in Aquatic Physiotherapy at Sunshine Hospital and the National Chair of the Australian Physiotherapy Association Aquatic Group. She also facilitates undergraduate training in aquatic physiotherapy at the University of Melbourne and Monash University. Sophie's particular area of interest is the management of chronic diseases including osteoarthritis and back pain.

In 2008 Sophie was awarded The Jack Brockhoff Foundation Churchill Fellowship. The Fellowship offers Sophie an opportunity to gain new knowledge and experience by giving her contact with international colleagues and services. This will include overseas travel to two conferences and visiting rehabilitation centres in Switzerland, Netherlands, Belgium, UK and the USA, including a trip back to where she originally received her Aquatic Physiotherapy qualification at the Royal National Hospital for Rheumatic Diseases in Bath, UK.

## PHYSIOTHERAPY

The Physiotherapy Department provides physiotherapy inpatient, outpatient, specialist clinic and community services across the clinical programs of the hospital and all four divisions of the organisation. Recent service development includes the establishment of new models focussed on Advanced Practice Physiotherapy Clinics in Orthopaedics and Paediatric Orthopaedics to facilitate prioritised Orthopaedic Surgery Waitlist Management.

We hope to continue to grow our research profile through involvement in a NMHRC trial and several conference presentations scheduled for the Australian Physiotherapy Association Conference in 2009.

### Researchers

**Jennifer Maciel:** Musculoskeletal Coordinator of Service

**Sophie Heywood:** Senior Physiotherapist (Hydrotherapy Unit)

**Willeke Walsh:** Senior Physiotherapist (Community Based Rehabilitation)

**Elizabeth McCowan:** Senior Physiotherapist (Continence Unit)

**Emily Cross:** Grade Two Physiotherapist

### Current Research

#### **Considerations for discharge planning in aquatic physiotherapy – facilitating self-management and independent aquatic exercise in chronic disease: a pilot trial.**

Sophie Heywood  
Emily Cross

#### **Administration of Patient satisfaction Survey for Early Assessment Osteoarthritis Hip/Knee Services (OAHKS) at Western Health.**

Jennifer Maciel

### Future Research Objectives

In 2009 we will be concentrating on the **AVERT Trial** (A Very Early Rehab Trial) which we are conducting in partnership with The Department of General Medicine. This is a NMHRC grant funded multicentre randomised controlled trial led by the National Stroke Research Institute. The trial involves treating acute stroke patients with several short therapy sessions.

### 2008 Achievements

#### Publications

**Heywood S,** Webster M. Considerations for Developing Core Stability Measures In An Aquatic Environment: A Pilot Trial With Water Polo Players. *Journal Of Aquatic Physical Therapy.* 2008; 16(1):6-9.

Haines T, Hill K, **Walsh W,** Osborne R. Design-Related Bias In Hospital Fall Risk Screening Tool Predictive Accuracy Evaluations: Systematic Review And Meta Analysis. *The Journal Of Gerontology: Medical Sciences.* 2007; 62:664-672.

Hill K, Vu M, **Walsh W.** 2007. Falls In The Acute Hospital Setting – Impact On Resource Utilisation. *Australian Health Review.* 2007; 31 (3): 471-477.

#### 2008 Conference and Seminar Presentations:

**Heywood S.** Aquatic Physiotherapy measures of core control. *Proceedings of the Australian Physiotherapy Association Aquatic Symposium, August 2008.*

**Walsh W,** Hill K, Haines T. Avoiding the Tumble – Sustained elements. *3rd Australian and New Zealand Falls Prevention (ANZFP) Conference. Melbourne October 2008.*

**McCowan E** and Kyrios M. Exploring the impact of thoughts, feelings and continence behaviour on the quality of life of women with urinary symptoms: Preliminary Findings. *Proceedings of the Third Biannual Excellence Downunder Conference University of Melbourne 2008.*

**McCowan E** and Kyrios M. What is the evidence that urinary symptoms are psychosomatic in origin: A literature review. *Proceedings of the Third Biannual Excellence Downunder Conference. University of Melbourne 2008.*



## NUTRITION

The Western Health Nutrition Department is comprised of 16 (full and part time) dietitians working across the three sites of Western Health.

The Nutrition Department is committed to providing high quality clinical services, supported by an evidence base where possible. In order to achieve this, other high priorities are that research and quality activities are also undertaken.

In 2008, as one of three health services, the nutrition department was successful in acquiring a clinical partnership with Deakin University for the training of Dietetic students. Participation in collaborative research projects with both the university and the other health services within this clinical partnership, is a high priority.

### Researchers

**Kathryn Pierce:** Manager of Nutrition Department

**Ashley Sandison:** Dietitian

**Amber Kelaart:** Dietitian

**Kim Dennis:** Dietitian

### Student Dieticians

**Hannah Podbury**

**Caitlyn Arnault**

### Current Research

**Assessing the adequacy of fluid intake in dysphagic patients and identifying the factors impacting on fluid intake at three Melbourne teaching hospitals.**

Nutrition Department

*Collaborators: Deakin University, MH and Austin Health*

**Guidelines for Management of Nutrition Priorities for Patients Receiving Chemotherapy.**

Amber Kelaart and Kathryn Pierce

**Are nutrition requirements being met in the intensive care setting?**

Ashley Sandison

**Improving the Practice of Nutrition Therapy in the Critically Ill: An International Quality Improvement Project.**

Ashley Sandison

*Collaborators: Kingston General Hospital, Canada*

**An evaluation of nutritional oral supplementation in Western Health.**

Kim Dennis

**To determine the percentage of target volume received by patients receiving continuous enteral feeds throughout Western Hospital (excluding ICU).**

Nutrition Department

**Application & Effectiveness of the high protein/high energy diet grade for inpatients at Western Health.**

Hannah Podbury and Caitlyn Arnault

### 2008 Achievements

#### Grants

**Amber Kelaart** Dietitians Association of Australia Small project grant \$5000 for Guidelines for Management of Nutrition Priorities for Patients Receiving Chemotherapy'.

**Nutrition Department** awarded \$7000 funding from Deakin University for a research project looking at the adequacy of fluid intake in dysphagic patients.

## SPEECH PATHOLOGY

The Speech Pathology Department is committed to the provision of a high quality, innovative and holistic service that endeavours to enhance the health and social well being of our culturally diverse community. The Department consists of approximately 21 qualified staff across the paediatric, acute and subacute services.

### Current Research

**Oral Hygiene Project.**

Claire Moody

**Western Health Assessment of Dysarthria.**

Jane Scholes

**Standardisation of terminology for texture modified foods and fluid.**

Juliet Hoey

**CALD Key phrases for dysphagia assessment.**

Courtney Pocock

**Courtney Pocock** has developed a tool comprising of key words and phrases for the five most common languages spoken by patients in the health network for use in initial dysphagia assessments. This tool has allowed Speech Pathologists to provide patients from non-English speaking backgrounds with more comprehensive and effective initial dysphagia assessments. Courtney is in the process of validating the effectiveness of this tool through a number of small research projects.

## OCCUPATIONAL THERAPY

### 2008 Achievements

The Victorian Stroke Clinical Network in 2008 decided to run a program to encourage and enable Victorian public sector allied health and nursing employees working in stroke care to undertake post-graduate studies in stroke care. A total of \$50,000 was allocated to fund this initiative. **Gabriela Veliz**, an occupational Therapist at Sunshine Hospital's Community Based Rehabilitation Centre was awarded a \$5,000 scholarship as part of this initiative to further her postgraduate studies in stroke care.

**Kate Cranwell** and **Sharon Vella** also presented a talk on "Measuring the effectiveness of Occupational Therapy" at the Australian Occupational Therapy National Conference, Melbourne, September.

# ANAESTHETICS



The Department of Anaesthesia and Pain Management provides perioperative, anaesthetic and acute and chronic pain services to the Footscray, Sunshine and Williamstown campuses. This translates into our staff providing services for approximately 25,000 surgical procedures and 4,000 deliveries a year. With the exception of Cardiac, all surgical specialities are represented. In addition, the Anaesthetic Department runs a busy acute and chronic pain service, teaching program and is actively involved in ongoing research and audit activities.

## Researchers

### Andrew Jeffreys:

Director of Anaesthetic Department

**Elizabeth Hessian:** Consultant Anaesthetist

**Stephen Hur:** Consultant Anaesthetist

**Coran Lang:** Consultant Anaesthetist

**John Grant:** Consultant Anaesthetist

**Abhay Umranikar:** Consultant Anaesthetist

**Rick Horton:** Supervisor of Anaesthetic Training

**David Bramley:** Departmental Quality Coordinator

**Ellen Kinkel:** Research Coordinator

**Lyndal Hayes:** Data Assistant

## Acute Pain Management Service

**Bronwen Evans:** Consultant Anaesthetist

**Jill Woods:** Clinical Nurse Consultant

**Davina Taylor:** Clinical Nurse Consultant

## Current Research

### Pilot trial of Transversus Abdominis Plane (TAP) Ropivacaine Infusions Following Abdominal Surgery.

Elizabeth Hessian

Bronwen Evans, Jill Woods, Davina Taylor

*Collaborators: RMH*

### The Enigma-II Trial: Nitrous oxide anaesthesia and cardiac morbidity after major surgery: a randomised controlled trial.

Andrew Jeffreys

Stephen Hur

*Collaborators: Bayside Health*

### The POISE Study: a randomised controlled, double-blind trial of metoprolol versus placebo.

John Grant

*Supported by: The Australian and New Zealand College of Anaesthetists (ANZCA)*

### The REASON Audit. A multicenter prospective audit measuring outcome in the elderly undergoing non day stay surgery.

Andrew Jeffreys

*Supported by: The Australian and New Zealand College of Anaesthetists (ANZCA)*

### A prospective randomised trial investigating the efficacy and safety of intranasal fentanyl for analgesia in labour.

Davina Taylor

Bronwen Evans

### Direct Observation of Clinical Skills – Perioperative Medicine. A Formative assessment tool for Anaesthetic Trainees.

Rick Horton

### A Survey of Anaesthetists regarding antacid prophylaxis for caesarean section.

Abhay Umranikar

### A prospective audit of outcome following radiofrequency denervation of the cervical and lumbar spine.

Andrew Jeffreys

Jill Woods

### A retrospective audit of outcome following surgery and anaesthesia in neonates and infants.

Andrew Jeffreys

### Audit of the feasibility and safety of preoperative paracetamol standing order.

Coran Lang

## 2008 Achievements

### Publications

**Bramley DEP,** The ability of anaesthetists to identify generic medications from trade names. *Anaesthesia and Intensive Care* Vol 37 Issue 4 p624-629.





# CARDIOLOGY

## PROFESSOR YEAN L. LIM

Professor Yeon L. Lim was born in Singapore and graduated from Monash University with the degrees of BMedSc, MBBS and PhD. He was awarded the Inaugural Monash University Distinguished Alumni Award in 1993 and made a Member of the Order of Australia in 1997 for his contributions to Education and Medicine in China and Australia.

Professor Lim has served as the Director of National Heart Centre and Chairman of National Medical Research Council in Singapore for five years. Recently Professor Lim returned to Melbourne to take up his new appointment as Director of Cardiovascular Therapeutics at Western Health and a Professorial Fellow at the University of Melbourne. Professor Lim is a leading cardiologist in the Asia Pacific region, serving as Permanent Secretary to the Asia Pacific Society of Interventional Cardiology (APSIC). Professor Lim pioneered coronary intervention in China in 1986, and helped to establish numerous coronary intervention units throughout China. In 1995 he founded the Xiamen University Medical College and was appointed its inaugural Dean for a five year term.

The Centre for Cardiovascular Therapeutics is the Percutaneous Coronary Intervention (PCI) Centre in western Victoria. Research programs of the centre focus on the role of CT coronary angiography in PCI and optimisation of primary angioplasty in acute myocardial infarction. It is also an accreditation site for advanced training in Cardiology of the Royal College of Physicians of Australia and New Zealand.

## Researchers

**Yean Lim:** Director, Centre for Cardiovascular Therapeutics

**David Eccleston:** Consultant Physician

**Anthony Walton:** Intervention Cardiologist

**Nick Cox:** Intervention Cardiologist

**Kean Soon:** Intervention Cardiologist

**Odgerel Tumur:** Medical Research Fellow (jointly funded position in collaboration with the Radiology Department at Western Health)

**Kay Murphy:** Research Coordinator

## Current Research

### Discharge Management of Acute Coronary Syndromes (DMACS).

Yean Lim

**CURRENT – OASIS 7: Clopidogrel optimal loading dose Usage to Reduce Recurrent Events/ Optimal Antiplatelet Strategy for InterventionS: a randomised, multinational double-blind study, comparing a high loading dose regimen of clopidogrel versus standard dose in patients with unstable angina or myocardial infarction managed with an early invasive strategy.**

David Eccleston

**Inhibition of a protein kinase C for the reduction of infarct size in acute myocardial infarction: Protection AMI Study.**

Yean Lim

**Western Heart Longitudinal Study (WHALES)-a study focusing on the screening of Coronary Arterial Disease in young adults.**

Kean Soon

**Quantitative Assessment of Stent Patency by Multi-slice CT Coronary Angiography.**

Yean Lim, Kean Soon and Odgerel Tumur

**Percutaneous Aortic Valvuloplasty and Valve Replacement.**

Anthony Walton

**An Analysis of patients who present after out of hospital cardiac arrest.**

Yean Lim, Darach Oh-Ici

## Future Research Objectives

The Centre hopes to capitalise on the heavy disease burden of coronary heart disease in western Victoria to study the prevention, early detection and treatment of coronary heart disease using combined epidemiological studies, non-invasive and invasive cardiac imaging and percutaneous intervention. Percutaneous aortic valvular replacement therapy is another area of clinical research in the near future.

## Links with Radiology

Kean Soon will be working with the Radiology Department at Western Health in his new project: **Western Heart Longitudinal Study (WHALES)** – a study focusing on the screening of coronary arterial disease in young adults using our state-of-the-art low radiation cardiac CT scanner at Western Hospital.

## 2008 Achievements

### Publications

Fang L, Gao X.M, Samuel C.S, Su Y, **Lim Y.L**, Dart A.M, Du X.J. Higher Levels Of Collagen And Facilitated Healing Protect Against Ventricular Rupture Following Myocardial Infarction. *Clin. Sci* 2008; 115(3):99-106.

O'h-Ici D, Zakhem B, Oqueli E, **Lim Y.L**. Tako-Tsubo Cardiomyopathy – A Differential Diagnosis For Chest Pain And ST Segment Elevation. *Heart Lung and Circulation*. 2008; 17(3): S97-S98.

Zakhem B, O h-Ici D, Oqueli E, **Lim Y.L**. The Impact Of Inter-Hospital Transfer And "Out-Of-Hours" Presentation On Door To Balloon Times. *Heart Lung and Circulation*. 2008; 17(3):S108-S109.

O h-Ici D, Oqueli E, Zakhem B, **Lim Y.L**. The Impact Of Gender On Door To Balloon Time Of Patients With ST Elevation Myocardial Infarction. *Heart Lung and Circulation*. 2008; 17 (3):S108.

Jabbour RJ, Dick R, **Walton A.S**. Aortic Balloon Valvuloplasty-Review And Case Series. *Heart Lung Circ*. 2008; 17 (4):S73-81. Epub 2008 Nov 14. Review.

Shaw JA, Andrianopoulos N, Duffy S, **Walton A.S**, Clark D, Lew R, Sebastian M, New G, Brennan A, Reid C, Ajani A.E. Melbourne Interventional Group. Renal Impairment Is An Independent Predictor Of Adverse Events Post Coronary Intervention In Patients With And Without Drug-Eluting Stents. *Cardiovasc Revasc Med*. 2008 Oct-Dec;9(4):218-23.

Garg P, **Walton A.S**. The New World Of Cardiac Interventions: A Brief Review Of The Recent Advances In Non-Coronary Percutaneous Interventions. *Heart Lung Circ*. 2008 Jun;17(3): 186-99. Epub 2008 Feb 11. Review.

**Cox N**. Managing the femoral artery in coronary angiography. *Heart lung and Circulation* 2008; suppl 17 4:S65-9.

**Soon KH**, Chaitowitz I, Selvanayagam J, Kelly AM, Zajhem B, Nguyen M, Bell KW, **Lim YL**. Comparison of fluoroscopic coronary angiography and multi-slice CT coronary angiography in the characterization of anomalous coronary arteries. *Int J Cardiol* 2008; 130:96-8.

Paul B, **Soon KH**, Dunne J, De Pasquale CG. Diagnostic and prognostic significance of plasma N-terminal-pro-brain natriuretic peptide in decompensated heart failure with preserved ejection fraction. *Heart Lung Circulation*. 2008; 17 (6): 497-501.

### Awards

**Yean Lim** awarded Kasarn Jatigawanich Memorial Lecturer, 40th Annual Scientific Meeting of the Thailand Cardiac Society, Bangkok, Thailand.

### Conference and Seminar Presentations

**K. Soon**: Live case transmission from the Royal Adelaide Hospital for the 2nd Australia-New Zealand Endovascular Therapies (ANZET) meeting, Adelaide, Australia. Two cases presented were "Complex PCI-Bifurcation Stenting" and "Use of Intracardiac Echo in the percutaneous closure of Patent Foramen Ovale (PFO)".

### Book Chapters

**Lim, Y.L**. Textbook of STEMI Interventions, Ed. Sameer Mehta, Chapter 18, HMP Communications, USA 2008.

**Lim, Y.L** Image-Guided Interventions, Ed. Mauro, Murphy, Thomson et al, Chapter 32, Heng RC, Soon KH, Ang SG et al, Saunders, USA 2008.

**Soon K.H**, Ang A, Bell K.W, **Lim YL**: Blood Vessel Of The Heart. In Mauro MA, Murphy K, Thomson K, Venbrux A, and Zollikofer C (eds): Image Guided Interventions. Philadelphia, Elsevier. 1st Edition (2008).

The **GE Lightspeed VCT XT** is a 64 slice CT scanner owned and operated by the Sunshine Hospital Radiology Department. It has an x-ray tube mounted opposite a 4cm wide detector bank, each detector 0.625mm thick and represents the slice thickness of each slice it captures.

To have this technology available at Western Health has opened the doors to a large expanse of leading edge research opportunities which in turn will allow Western Health to offer our patients an increased level of care.





# DRUG & ALCOHOL SERVICES

Western Health provides inpatient treatment for patients with medical complications related to Addiction (i.e. Addiction Medicine Unit) and also a comprehensive, community based Drug & Alcohol service (DAS-West). DAS-West includes residential detox units for youth and adults respectively, outreach support teams, a women's program (with Mother-Baby Unit), a youth program (with physician in adolescent medicine), a forensic program and a specialist pharmacotherapy program for patients with complex co-morbidities (e.g. chronic pain, mental illness, other chronic medical conditions).

## Researchers

- Michael McDonough:** Medical Director
- Vicki Grgic:** Psychologist, Dual Diagnosis Homeless Clinician
- Anne McKenry:** Manager Adult and Specialist Services
- Moses Abbatangelo:** Manager Adult and Specialist Services
- Jennifer Pilgrim:** PhD Student – Victorian Institute of Forensic Medicine

## Current Research

**A Single Arm, Open Label, Pilot Study Evaluating The Efficacy And Safety Of Directly Observed Peg interferon Alfa 2a With Ribavirin In Conjunction With A Peer Counsellor In Patients Actively Injecting Drugs Who Have Chronic Hepatitis C (HCV) And Attend A Drug And Alcohol Centre.**

Ian Kronborg  
*Collaborators: RMH, Nepean Hospital, First Step Clinic*

**A Study To Determine The Extent Of Inherited Vulnerability Of Drugs Metabolising Capability and Relevance To Explain Potential Toxic Concentrations Of Drugs.**

Michael McDonough  
 Jennifer Pilgrim  
*Collaborators: Victorian Institute of Forensic Medicine*

**National Treatment Service users Project Phase 2 (TSU2).**

Moses Abbatangelo  
*Collaborators: Australian Injecting and Illicit Drug Users' League (AIVL)*

**Gender Preferences for Counselling Style in a Drug Treatment Setting.**

Michael McDonough  
 Vicki Grgic

## Future Research Objectives

Intended Completion of work in drug metabolism and relevance to toxic concentration. Other plans for 2009 will be research in the area of prescription analgesic abuse and dependence.

## 2008 Achievements

### Conference and Seminar Presentations

- M McDonough:** 19th International Symposium on Forensic Sciences, Melbourne Convention Centre, October. "Pitfalls in the Interpretation of Drug Concentrations for Drugs of Dependency: Methadone".
- M McDonough:** DuPont Symposium on Logistics & Safety, Shanghai. September. "Drugs, Impairment & the Transport Industry".
- M McDonough:** 4th International Conference on Pain & Chemical Dependence, Philadelphia, USA. November 2008. "Buprenorphine in the Treatment of Chronic Daily Headache".



# DIABETES

## CHERYL STEELE

Cheryl Steele currently fulfils the role of Manager of Diabetes Education Services at Western Health, a role she has held since 2004. She manages staff on each of the three campuses and is responsible for inpatients and outpatients across Western Health.

With 20 years experience working in the specialty of diabetes, Cheryl is absolutely dedicated to her patients' care and for development of services which extends beyond the normal hours and requirements of her role.

Diabetes, the sixth leading cause of death in Australia, with 275 Australians developing the disease every day, is also a growing concern in the Western Health community, where Cheryl set up the first adult Continuous Subcutaneous Insulin Infusion Pump Service, in Australia. It is a credit to Cheryl that this pump therapy service provides a centre of excellence and has the largest patient base, nationally.

This service assists patients undergoing the trauma of daily injections and managing diabetes, reducing the need for hospital admissions.

Cheryl has presented at numerous conferences, has published a number of articles in nursing journals and has written a book. One article – on running group mentoring programs for Diabetes Nurse Educators – was recognised by the Australian Diabetes Educators Association and now appears on their website as an example of a successful mentoring model.

The Diabetes Service is an integral part of the Endocrinology Unit. Clinical services are provided to Western, Sunshine and Williamstown Hospitals along with community outreach clinics in community health centres at ISIS Deer Park and WRHC Footscray. We are a full member of the National Association of Diabetes Centres (NADC) and participate in national benchmarking and clinical audit programs of NADC. Collaborative clinical research is undertaken in association with a number of other hospitals and University departments.



**Improving control of cardiovascular risk factors in people with type 2 diabetes.**

Shane Hamblin  
Cheryl Steele

*Collaborators: University of Sydney, Bankstown Hospital, Diabetes Collaborative Network (9 Major Diabetes Centres in Qld, NSW, ACT, Vic and Tasmania), National Health and Medical Research Council, National Institute of Clinical Studies/ George Institute*

**Navigator™ CGM (continuous glucose monitor) familiarisation trial.**

Cheryl Steele  
Shane Hamblin

**Future Research Objectives**

Include long-term follow-up of patients with Type 1 diabetes using CSII and to provide supervision to post – graduate students for projects related to diabetes self management and quality of life.

**2008 Achievements**

**Publications**

**Hamblin S.** Diabetes and Travel Advice. *Diabetes Management Journal*, 2008; 22:30.

**Awards**

**C Steele** awarded the Jen Rusden Memorial Award (2008). The Jen Rusden Memorial Award, sponsored by the Department of Human Services is a nursing state excellence award.

Melinda Peckham awarded Best Poster Presentation (nursing) Western Health Research Week 2008.

**Conference and Seminar Presentations:**

**C Steele.** Setting up a pump clinic in a metropolitan hospital. Best Practice Diabetes Centres, Sydney.

**C Steele.** Insulin Pump therapy. Diabetes and cardiology conference. St. Vincent's Hospital, Melbourne.

**Peckham M, Dade G, Steele C.** Developing the Insulin Stabilisation Clinic. Western Health Research Week 2008.

**Abstracts**

National Australian Diabetes Society/ Australian Diabetes Educators Association (ADS/ADEA) joint Scientific Meeting, Melbourne 2008.

Aylen T, Chow R, **Steele C.** Expanding Community-Based Home Support By Diabetes Educators.

Australian Diabetes Society/ Australian Diabetes Educators Association (ADS/ADEA) joint Annual Scientific Meeting, Melbourne 2008. **Steele C,** Buszard M, Colman P, Gebert R, Jenkins A, Marom L, O'Neal D, Roem K, Stevenson V, Sue Wyatt S. Proposed Guidelines for Insulin Pump Therapy. Victorian Continuous Subcutaneous Insulin Infusion (CSII) Group.

European Association for the Study of Diabetes (EASD) 44th Annual Meeting, Rome 2008. O'Neal D, Krishnamurthy B, Best J, Cameron F, Colman P, **Hamblin PS,** O'Connell M, Rodda C, Teede H, Jenkins A. An Algorithm Guiding Type 1 Diabetes Patients On Continuous Subcutaneous Insulin Infusion (CSII) Re Real-Time Continuous Glucose Monitoring (CGM) Information.

**Book Chapters**

Guide for Insulin Pump Therapy. Ed 3 **Steele C,** White E, Buszard M. Diabetes Care Abbott 2008.

**Researchers**

**Associate Professor Shane Hamblin:**  
Director of Diabetes Unit

**Cheryl Steele:**  
Manager of Diabetes Education Services

**Melinda Peckham:**  
Clinical Nurse Consultant

**Heather Margetts:**  
Clinical Nurse Consultant

**Gifty Dade:** Clinical Nurse Consultant

**Mary Carolan:** Victoria University  
Research Student

**Hamzah Al Zubaidi:** Monash University  
Research Student

**Current Research**

**Attitudes towards Gestational Diabetes among multi-ethnic women in Australia.**

Cheryl Steele  
Heather Margetts, Mary Carolan  
*Collaborators: Victoria University*

**Evaluation of an algorithm to guide patients with type 1 diabetes treated with continuous subcutaneous insulin infusion (CSII) on how to respond to real-time continuous glucose levels – a randomised control trial.**

Shane Hamblin  
Cheryl Steele  
*Collaborators: St Vincents Hospital, RCH, RMH and Monash Medical Centre*

**Analysis of human T-cells in autoimmune disease.**

Cheryl Steele  
*Collaborators: RMH and St Vincent's Medical Institute*

**Cultural Influence on Diabetes Self Management: A Cross Cultural Comparison.**

Cheryl Steele  
Hamzah Al Zubaidi  
*Collaborators: Monash University*



#### PROFESSOR ANNE-MAREE KELLY

Professor Kelly is Director of the Joseph Epstein Centre for Emergency Medicine Research in Melbourne, Australia and Professorial Fellow of The University of Melbourne. With over 150 publications, her research interests include pain management, acute cardiology, migraine, asthma, pneumothorax and medical education as well as blood gas analysis. Professor Kelly is an international editor for *Annals of Emergency Medicine*, is on the editorial board of *Emergency Medicine Australasia* and *The Hong Kong Journal of Emergency Medicine* and is a reviewer for over 20 journals including *New England Journal of Medicine*, *British Journal of Sports Medicine*, *Medical Journal of Australia* and *BMJ*.

# EMERGENCY

The three emergency departments at Western Health, with presentations of over 125,000 patients per year, servicing a vast area of the west of metropolitan Melbourne are fertile ground for research. Western Hospital sees higher acuity adult presentations, including some major trauma, Sunshine Hospital specialises in women's and children's illnesses but also sees adults with the whole range of medical and surgical conditions and Williamstown sees lower acuity patients of all ages.

The Joseph Epstein Centre for Emergency Medicine Research at Western Health, of which Professor Kelly is the Director, is located at Sunshine Hospital in St Albans, Melbourne, Australia.

The aim of the Centre is translating evidence into better health care by:

- Performing high quality clinical research in the areas of emergency medicine and pre-hospital care
- Developing partnerships for research, both across regional (intrastate, national and international) and across disciplines (ambulance, medical, nursing, community)
- Providing education and support to workers in pre-hospital care and emergency medicine in order to develop research that will improve outcomes for patients; and
- Demonstrating the translation of evidence into improved practice.

Key areas of interest are:

- The management of cardiovascular disease
- Pain assessment and management
- Therapeutics for emergency conditions
- Prehospital care research; and
- Process/outcome improvement.

### Researchers

**David Krieser:** Paediatric Emergency Physician  
Honorary Fellow JCEMR  
Honorary Clinical Senior Lecturer,  
University of Melbourne

Joseph Epstein Centre for Emergency  
Medicine Research

**Professor Anne-Maree Kelly:**  
JCEMR Director

**Sharon Klim:** Research Coordinator

**Karen Enno:** Research Coordinator

**Debra Kerr:** Deputy Director

(until December 2008)

**Megan Clooney:** Research Nurse

(until October 2008)

### Current Research

**Effectiveness And Safety Of Intranasal Naloxone For Treatment Of Opiate Overdose In The Pre Hospital Setting.**

Debra Kerr

Anne-Maree Kelly, Bill Barger, Paul Dietze,

Damien Jolley, K Cantwell

**Validation of the ABCD, ABCD2 and California Risk Scores in identifying patients with high early risk of stroke after transient ischaemic attack.**

Anne-Maree Kelly,

Debra Kerr, Hong Nguyen

**Occupational Hand Injuries Requiring Treatment At An Australian Emergency Department.**

Anne-Maree Kelly

Debra Kerr

**What Proportion Of Rule Out Acute Coronary Syndrome Patients Would Be Suitable For Multi-Slice CT Coronary Angiography?**

Anne-Maree Kelly

Debra Kerr, Suleiman Hamid,

Fiona Bainbridge

**Assessment, Management And Outcome Of Children Who Present To The Emergency Department With Croup.**

Debra Kerr

David Krieser, Edwin Kwan

**Initial Serum Troponin And Outcome In An ED Population: A Retrospective Study.**

Anne-Maree Kelly

Debra Kerr, Hwee Min Lee

**Does Size Measurement On Inspiratory And Expiratory X-Rays Alter Size Classification Of Primary Spontaneous Pneumothorax?**

Anne-Maree Kelly

Dino Druda

**Survey Of Management Practices For Suspected Scaphoid Fracture.**

Anne-Maree Kelly

**The Relative Efficacy Of Phenothiazines For The Treatment Of Acute Migraine – A Meta-analysis.**

Anne-Maree Kelly

**Determining The Value Of Intermediate Troponin Values With Respect To Short And Medium-Term Prognosis: A prospective study.**

Anne-Maree Kelly

**Development and validation of risk-adjusted outcomes for systems of emergency medical care.**

Anne-Maree Kelly

*Collaborators: University of Sheffield, UK*

**Agreement between transcutaneous and arterial pCO<sub>2</sub> in patients undergoing non-invasive ventilation in the emergency department.**

Anne-Maree Kelly

**Assessment of Chest Pain in Emergency Departments.**

Anne-Maree Kelly

**Comparative Re-hydration In Bronchiolitis (CRIB) study.**

David Krieser

*Collaborators: Southern Health, RCH*

**Nurse Practitioner Management of Ankle Injuries.**

Debra Kerr

Ian Law

**Prospective study of Dog Bite Presentations in the Emergency Department.**

Colleen Fluharty, Theresa Wilkie,

David Krieser

*Collaborators: The Monash University Accident Research Centre (MUARC)*

# MEDICINE

## Paediatric Orthopaedic Education Project.

David Krieser  
Nadine Sharples

## Management of Paediatric Fractures in the Emergency Department.

David Krieser  
Amaali Lokuge

## A stepped wedge design study to evaluate the effectiveness of implementing NHMRC approved guidelines to improve pain management in Australian emergency departments.

Jason Harney  
Leanne Smith

*Collaborators: NHMRC (National Health and Medical Research Council)*

## 2008 Achievements

### 2008 Journal Publications

**Kelly AM.** Will CT Coronary Angiography Revolutionise Emergency Department Chest Pain Evaluation? *Hong Kong J Med* 2008; 15: 67-70.

Aroney CN, Aylward P, Chew D, Huang N, **Kelly AM**, White H, Wilson M. 2007 addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the management of acute coronary syndromes 2006. *Med J Aust.* 2008; 188:302-3.

**Kerr D**, Dietze P, **Kelly AM**. Intranasal naloxone for the treatment of suspected heroin overdose. *Addiction* 2008; 103:379-86.

Eagles D, Stiell I, Clement C, Brehaut JC, Taljaard M, **Kelly AM** et al. International Survey of Emergency Physicians' Awareness and Use of the Canadian C-Spine Rule and the Canadian CT Head Rule *Acad Emerg Med* 2008; 15:1256-61.

**Kelly AM**, **Druda D**. Comparison of size classification of primary spontaneous pneumothorax by three international guidelines: A case for international consensus? *Resp Med* 2008; 102:1830-2.

**Kerr D**, Jennings P, **Kelly AM**, Walker T, Edington J. Case report: Trial of prehospital thrombolysis in ST elevation myocardial infarction. *JEPJC* 2008 www.jephc.com/uploads/DK990277.pdf.

Anderson B, **Kelly AM**, **Kerr D**, Jolley D. Capillary refill time in adults has poor inter-observer agreement. *Hong Kong J Emerg Med* 2008; 15: 71-4.

Grayson ML, Jarvie LJ, Martin R, Johnson PDR, Jodoin ME, McMullan C, Gregory RHC, Bellis K, Cunningham K, Wilson FL, Quin D, **Kelly AM**. Significant reductions in methicillin-resistant *Staphylococcus aureus* bacteremia and clinical isolates associated with a multi-site, hand hygiene culture-change program and subsequent successful State-wide rollout. *Med J Aust* 2008;188:633-40.

**Kerr D**, Dietze P, **Kelly AM**, Jolley D. Attitudes of Australian heroin users to peer distribution of naloxone for heroin overdose: Perspectives on intranasal administration. *J Urban Health* 2008;85:352-60.

Soon KH, Chaitowitz I, Selvanayagam J, **Kelly AM**, Zajhem B, Nguyen M, Bell KW, Lim YL. Comparison of fluoroscopic coronary angiography and multi-slice CT coronary angiography in the characterization of anomalous coronary arteries. *Int J Cardiol* 2008; 130:96-8.

**Kelly AM**, **Clooney M**, **Kerr D**, **Ebeling PR**. When continuity of care breaks down: a systems failure in identification of osteoporosis in older patients treated for minimal trauma fractures. *Med J Aust* 2008; 188:389-91.

**Kelly AM**, **Clooney M**. Spontaneous Pneumothorax Australia Study Group. Deviation from published guidelines in the management of primary spontaneous pneumothorax in Australia *Int Med J* 2008; 38:64-7.

**Kelly AM**, **Kerr D**, **Clooney M**. Impact of Oral Dexamethasone Versus Placebo After ED Treatment Of Migraine With Phenothiazines On The Rate Of Recurrent Headache: A Randomised Controlled Trial. *Emerg Med J* 2008; 25:26-9.

Spillane IMH, **Krieser DMZ**, Babl F, Heinrich L. Diagnostic Coding for Paediatric Patients: Practice in Three Emergency Departments. *Journal of Paediatrics and Child Health.* September 2008; 44(9):A15-A16

Babl FE, Sheriff N, Borland M, Acworth J, Neutze J, **Krieser D**, Ngo P, Schutz J, Thomson F, Cotterell E, Jamison S Francis Paediatric acute asthma management in Australia and New Zealand: practice patterns in the context of clinical practice guidelines. *Archives of Disease in Childhood.*2008; 93(4) 307-12

### Grants

Medical Research Council [UK] in partnership with Medical Care Research Unit, University of Sheffield. *Development of risk-adjusted methods to evaluate systems of emergency medical care* [GBP 30,000] Emergency Medicine Research Foundation. *Determining the value of intermediate troponin values with respect to short and medium term prognosis.* 2008 \$10,000.

### Awards

**Sir Richard Stawell Memorial Prize**; Australian Medical Association Victoria for article Grayson ML, Jarvie LJ, Martin R, Johnson PDR, Jodoin ME, McMullan C, Gregory RHC, Bellis K, Cunningham K, Wilson FL, Quin D, **Kelly AM**. *Significant reductions in methicillin-resistant Staphylococcus aureus bacteremia and clinical isolates associated with a multi-site, hand hygiene culture-change program and subsequent successful State-wide rollout.* *Med J Aust* 2008;188:633-40.

**MJA/Wyeth Award For Excellence In Clinical Research 2008** for: Grayson ML, Jarvie LJ, Martin R, Johnson PDR, Jodoin ME, McMullan C, Gregory RHC, Bellis K, Cunningham K, Wilson FL, Quin D, **Kelly AM**. *Significant reductions in methicillin-resistant Staphylococcus aureus bacteremia and clinical isolates associated with a multi-site, hand hygiene culture-change program and subsequent successful State-wide rollout.* *Med J Aust* 2008;188:633-40.

**Morson Taylor Research Award**, Australasian College for Emergency Medicine; Research Foundation. *Determining the value of intermediate troponin values with respect to short and medium term prognosis.* **AM Kelly.**

**Winner, Best Paper.** Australian College of Ambulance Professionals 2008 Annual Conference. *Effectiveness and safety of intranasal naloxone for the treatment of heroin overdose by paramedics.* **D. Kerr.**

**Silver Award Winner, Victorian Public Healthcare Awards.** *Effectiveness and safety of intranasal naloxone for the treatment of heroin overdose by paramedics.* **D. Kerr**

**Best Poster Prize – Royal Children's Hospital Research Day in December 2008** for: Spillane IMH, **Krieser DMZ**, Babl F, Heinrich L. Diagnostic Coding for Paediatric Patients: Practice in Three Emergency Departments. *Journal of Paediatrics and Child Health.* September 2008; 44(9):A15-A16.

## Conference and Seminar Presentations

Research that will change your practice. *Victorian Faculty, ACEM Annual Scientific Meeting, Melbourne, August 2008. [Plenary].*

Identification and follow-up of osteoporosis. *Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008. [Plenary].*

The Joseph Epstein Centre for Emergency Medicine Research: A little bit goes a long way? *Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008. [Plenary].*

Effectiveness And Safety Of Intranasal Naloxone For Treatment Of Heroin Overdose By Ambulance Officers. *Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008.*

Treatment of migraine in Australian emergency departments. *Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008.*

Outcomes of emergency department patients treated for spontaneous pneumothorax. *Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008.*

### Posters

Visual Analog Scales For Assessment of Nausea Severity: Correlation With Verbal Descriptors And Definition of Minimal Clinically Significant Difference In An Emergency Department Population. [Society for Academic Emergency Medicine, Washington 2008].

Effectiveness And Safety Of Intranasal Naloxone For Treatment Of Heroin Overdose By Ambulance Officers. [Society for Academic Emergency Medicine, Washington 2008].

Attitudes Of Australian Heroin Users To 'Take-home' Naloxone For Heroin Overdose And Methods Of Administration. [Society for Academic Emergency Medicine, Washington 2008].

What really happens to patients with spontaneous pneumothorax managed with outpatient observation alone? [Society for Academic Emergency Medicine, Washington 2008].

What Proportion Of Rule Out Acute Coronary Syndrome Patients Are Potentially Suitable For Multi-slice CT Coronary Angiography? [Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008].

What is the difference in estimated size of primary spontaneous pneumothorax between inspiratory and expiratory radiographs? [Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008].

Initial management of potential occult scaphoid fracture in Australasia. [Australasian College for Emergency Medicine Annual Scientific Meeting, Wellington NZ 2008].

### Book Chapters

**Kelly AM**, Gunn B. *Acute pain management in the emergency department.* In Rice A [Ed] *Textbook of Clinical Pain Management.* Hodder & Stoughton London.

**Kelly AM**, **Kerr D**, Dietze P. *Intranasal naloxone for treatment of opioid overdose* in Opioid Receptors and Antagonists: From Bench to Clinic. Dean R, Bilsky E, Negus S [Eds]. Humana Press.

**Kelly AM**, Cross A, Cameron P. *Non-invasive ventilation for acute respiratory failure in the emergency department: Comparison of continuous positive airway pressure [CPAP] and bi-level positive airway pressure [Bi-PAP].* In Esquinas A, Volsko T, Scala R [Eds] *International Respiratory Care Clinics and Technology.* Mason/Grupo Aulamedica 2008.



# ENDOCRINOLOGY

PROFESSOR PETER EBELING AND ASSOCIATE PROFESSOR ROBIN DALY

In January 2008, Professor Ebeling commenced his role as Associate Editor of Journal of Bone and Mineral Research, which at 6.6 is the Journal with the highest Impact Factor in the field of bone and mineral metabolism. He also Chaired a NHMRC Grant Review Panel on Musculoskeletal Diseases and was a member of the Clinical Centres of Research Excellence Grant Review Panel. He is also a co-author of the National Osteoporosis Management Guidelines developed by RACGP and NHMRC and is a member of the working group for the Therapeutic Guidelines on Endocrinology. The definitive versions of both Guidelines will be published in the second half of 2009. Professor Ebeling was also appointed Faculty of Medicine, Dentistry and Health Sciences Domain Co-ordinator in Clinical Sciences and Health Service Research.

A major boost to the research team occurred when Associate Professor Robin Daly was appointed in early 2008 to take the place of Professor Andy Giraud as Honorary Principal Research Fellow in our Department. Associate Professor Daly has a strong research background in lifestyle medicine, particularly the effects of calcium and vitamin D nutrition and exercise on musculoskeletal health and function in older adults. His appointment coincided with the award of a \$450,000 research grant from ANZ Trustees and Osteoporosis Australia to fund a community-based exercise and osteoporosis education program based in the Western suburbs. The main aim of this three year translational project is to examine the effects of a novel exercise program on bone strength, muscle function and falls in the elderly at risk of osteoporosis. This is a collaborative project with Arthritis Victoria, Osteoporosis Australia, Blackmores Ltd, YMCA Victoria and a number of local councils.

Endocrinology research at Western Health is carried out by the “**Lifestyle Medicine Research Group**”. This group is focused on the role of “lifestyle medicine”, which incorporates conventional medicine with lifestyle interventions such as exercise and nutrition, to prevent and manage a broad range of preventable lifestyle-related health conditions, particularly osteoporosis and related fractures, sarcopenia (age-related muscle loss), and type 2 diabetes. Our research involves utilising state-of-the-art imaging techniques, such as quantitative computed tomography (QCT) and magnetic resonance imaging (MRI) to assess the influence of lifestyle interventions on bone material and structural properties, aortic calcification, and body composition. Other research within our group focuses on the public health issues related to vitamin D deficiency and the effects of calcium and vitamin D on cardiovascular disease, type 2 diabetes, management of post-transplantation osteoporosis and the genetics and treatment of osteoporosis in men.

## Researchers

### **Professor Peter Ebeling:**

Head of Endocrinology

### **Associate Professor Robin Daly:**

Principal Scientist/Honorary Principal Research Fellow

**Claudia Gagnon:** Research Fellow

**Christine Bailey:** Research Fellow

**Anjali Haikerwal:** Research Officer

**Jia Wei Teo:** Research Assistant

**Sue Harvey:** Bone Densitometry Technician

## Students

**Belal Khan:** PhD

**Jenny Gianoudis:** PhD

**Claudine Tsao:** PhD

**John Sheedy:** PhD

**Khoa Dang Truong:** BSc (Honours)

**Roisin Briscoe:** BSc (Honours)

**Gorata Pearl Mathaithai:** AMS

**Thuvataka Jeyakumar:** AMS

## Current Research

**Osteo-cise: Strong Bones for Life. An Inclusive Evidence-based Multi-component Exercise, Falls Prevention and Osteoporosis Education/Awareness Program.**

Robin Daly

**Does increased consumption of lean red meat with regular exercise reduce inflammation and enhance the effects on muscle health and functional performance in elderly women?**

Robin Daly

**Effect of dietary calcium intake on bone and vascular events: A population based longitudinal cohort.**

Peter Ebeling

**Impact of Vitamin D and Calcium supplementation on the metabolic profile of glucose intolerant and vitamin D deficient obese subjects: a double blind, randomised and controlled trial.**

Peter Ebeling

**Vitamin D deficiency in Victoria. Consistent messages for the health professionals.**

Peter Ebeling

**High Dose Vitamin D Therapy in Vitamin D Deficient Refugees with Latent Tuberculosis.**

Peter Ebeling

**Effects on Androgen Deprivation Therapy on bone mineral density in patients with prostate cancer.**

Peter Ebeling

**Is Periodontal disease a risk factor for jaw osteonecrosis in patient taking intravenous bisphosphonates.**

Peter Ebeling

**Profiling of bone formation and resorption markers in metabolic bone diseases using nuclear magnetic resonance and mass spectroscopy based metabolomics.**

Peter Ebeling

**A Phase III Randomised, Placebo-Controlled Clinical Trial to Assess the Safety and Efficacy of Odanacatib (MK-0822) to Reduce the Risk of Fracture in Osteoporotic Postmenopausal Women Treated With Vitamin D and Calcium.**

Peter Ebeling

**Open Label, Single Arm, Extension Study to Evaluate the Long Term Safety and Sustained Efficacy of Denosumab (AMG162) in the Treatment of Postmenopausal Osteoporosis.**

Peter Ebeling

## 2008 Achievements

### Publications

Kukuljan S, Nowson C, Bass S, Sanders K, Nicholson G, Seibel M, Salmon J, **Daly R**. Effects of Exercise and Calcium-Vitamin D3 Fortified Milk on Bone Mineral Density in Older Men. *Osteoporosis Int* 2008 Oct 28. [Epub ahead of print] (IF 4.216).

**Daly R, Haikerwal A, Ebeling P**. Elderly men may benefit from vitamin D. *Agro FOOD Industry High-tech* 19(5): 32-34, 2008.

**Daly R**, Ahlborg H, Ringsberg K, Gardsell P, Sernbo I, Karlsson MK. Changes in habitual physical activity in elderly men and women: Associations with changes in BMD, muscle strength, functional performance and fractures. *J Am Geriatr Soc* 56:2252-2260, 2008.

**Daly R**, Stenevi-Lundgren S, Lindén C, Karlsson M. Muscle determinants of bone mass, geometry and strength in prepubertal girls. *Med Sci Sports Exer* Jun;40(6):1135-1141, 2008.

**Daly R**, Petras N, Bass S, Nowson C. Are the skeletal benefits of calcium and vitamin D3 fortified milk maintained following withdrawal of supplementation in older men? *Am J Clin Nutr* 87:771-7, 2008.

Telford R, Cunningham R, **Daly R**, Budge M, Gravenmaker K, Bass S, Javadi A, Lafferty A, Reynolds G, Telford R. Inconsistency of international fatness classifications in 8 year-old Australians. *Ann Hum Biol* 35(3): 334-41, 2008.

Eser P, Cook J, Black J, Iles R, **Daly R**, Bass S. Interaction between playing golf and HRT on vertebral bone properties in post-menopausal women measured by QCT. *Osteoporosis Int* 19(3):311-9, 2008.

**Gagnon C**, Li V, **Ebeling PR**. Osteoporosis in men: its pathophysiology and the role of teriparatide in its treatment (Review). *Clinical Interventions in Aging*. 2008 (on-line early).

Chaput JP, Arguin H, **Gagnon C**, Tremblay A. Increase in depression symptoms with body weight loss: association with glucose homeostasis and thyroid function. *Applied Physiology, Nutrition and Metabolism*. 2008; 33: 86-92.

**Ebeling PR**, Burr DB. Editorial – Positive effects of intravenous zoledronic acid on bone remodelling and structure: Are different effects on osteoblast activity to other oral bisphosphonates responsible? *J Bone Miner Res*. 2008 23(1): 2-5.

Sambrook PN, **Ebeling PR**. Osteonecrosis of the jaw. *Curr Rheumatol Rep*. 2008 10(2):97-101.

Gibney KB, Macgregor L, Leder K, Torresi J, Marshall C, **Ebeling PR**, Biggs BA. Vitamin D Deficiency Is Associated with Tuberculosis and Latent Tuberculosis Infection in Immigrants from Sub-Saharan Africa. *Clin Infect Dis*. 2008 Jan 3.

Wentworth JM, Gao N, Sumithran KP, Maartens NF, Kaye AH, Colman PG, **Ebeling PR**. Prospective evaluation of a protocol for reduced glucocorticoid replacement in transsphenoidal pituitary adenomectomy: prophylactic glucocorticoid replacement is seldom necessary. *Clin Endocrinol (Oxf)*. 2008 Jan;68(1):29-35.

Grainger R, Stuckey S, O'Sullivan R, Davis SR, **Ebeling PR**, Wluka AE. What is the clinical and ethical importance of incidental abnormalities found by knee MRI? *Arthritis Research & Therapy*. Feb 5; 10(1): R18 [Epub ahead of print].

Kelly A-M, Clooney M, Kerr D, **Ebeling PR**. When continuity of care breaks down: a systems failure in identification of osteoporosis risk in older patients treated for low impact fractures. *MJA* 2008; 188(7): 389-91.

**Ebeling PR**. Clinical Practice. Osteoporosis in Men. *N Engl J Med*. 2008 Apr 7; 358(14): 1474-82.

Erbas B, **Ebeling PR**, Couch D, Wark JD. Suburban clustering of vitamin D deficiency in Melbourne, Australia. *Asia Pac J Clin Nutr*. 2008;17(1):63-7.

Khosla S, Burr D, Cauley J, Dempster DW, **Ebeling PR**, Felsenberg D, Gagel RF, Gilsanz V, Guise T, Koka S, McCauley LK, McGowan J, McKee MD, Mohla S, Pendrys DG, Raisz LG, Ruggiero SL, Shafer DM, Shum L, Silverman SL, Van Poznak CH, Watts N, Woo SB, Shane E. Oral bisphosphonate-induced osteonecrosis: risk factors, prediction of risk using serum CTX testing, prevention, and treatment. *J Oral Maxillofac Surg*. 2008 Jun;66(6):1320-1; author reply 1321-2.

Zhu K, Bruce D, Austin N, Devine A, **Ebeling PR**, Prince RL. A Randomized Controlled Trial of the Effects of Calcium with or Without Vitamin D on Bone Structure and Bone Related Chemistry in Elderly Women with Vitamin D Insufficiency. *J Bone Miner Res*. 2008 Apr 14.

Buchbinder R, Osborne RH, **Ebeling PR**, Wark JD, Mitchell P, Wriedt CJ, Wengier L, Connell D, Graves SE, Staples MP, Murphy B. Efficacy and safety of vertebroplasty for treatment of painful osteoporotic vertebral fractures: a randomised controlled trial. *BMC Musculoskelet Disord*. 2008 Nov 25;9:156.

Chapman I, Greville H, **Ebeling PR**, King SJ, Kotsimbos T, Nugent P, Player R, Topliss DJ, Warner J, Wilson JW. Intravenous zoledronate improves bone density in adults with cystic fibrosis. *Clin Endocrinol (Oxf)*. 2008 Sep 25. [Epub ahead of print].

### Grants

Diabetes Australia Research Trust. **Ebeling P, Gagnon C**, Lu Z, **Daly R**, Carpentier A. 2008-09. Can calcium and vitamin D reduce diabetes and cardiovascular risk in overweight people? \$59,997.

University of Melbourne Research Grant. **Ebeling PR, Khan B, Daly R**, Nowson C. 2008-09. Calcium effect on bone and vascular events in MCCA cohort. \$39,625.

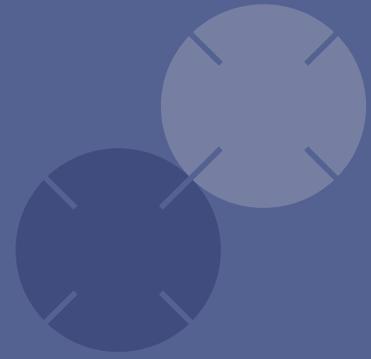
JR & JO Wicking Trust (ANZ Trustees). **Daly R**, Nowson C, **Ebeling P**, Sanders K, Hill K. 2008-10. 'Osteo-cise': Strong Bones for Life. An Inclusive Evidence-based Multi-component Exercise, Falls Prevention and Osteoporosis Education/Awareness Program. \$450,000.

Meat & Livestock Australia. **Daly R**, Nowson C, Dunstan D. 2008-10. Does increased consumption of lean red meat with regular exercise reduce inflammation and enhance the effects on muscle health and functional performance in elderly women. \$370,000.

Deakin University, Faculty Grant. Kukuljan S, Ducher G, **Daly R**. 2008. Utility of bone turnover markers to predict changes in bone mineral density after an exercise intervention in healthy older men. \$17,500. NHMRC Career Development Award. **Daly R**. 2007-12. *Lifestyle prescription for improving musculoskeletal health and function throughout the lifespan*. \$452,500.

NHMRC Project Grant. Dunstan D, Ball K, Salmon J, Crawford D, **Daly R**. 2007-09. *A behavioral intervention for the adoption and maintenance of physical activity in type 2 diabetes*. \$321,875.

Commonwealth Institute. Bass S, **Daly R**, Siebel M, Naughton G. 2006-08. *Lifestyle of our Kids (LOOK): A longitudinal investigation of the influence of lifestyle on health*. \$257,000.



## Conference and Seminar Presentations

### Peter Ebeling

Jean Hailes Foundation. Better Bones of Life Osteoporosis Women's Update – Videoconference. Women's Health Meeting, University of Melbourne – Update on Osteoporosis.

ANZBMS Annual Scientific Meeting – Osteoporosis in Men, Melbourne.

50th Anniversary Annual Scientific Meeting of Endocrine Society of Australia – Bisphosphonate Use in Osteoporosis: Benefits and Risks, Melbourne.

ANZBMS/Osteoporosis Australia Clinical Update on Osteoporosis, Melbourne.

30th Annual Scientific Meeting American Society for Bone and Mineral Research – Meet the Professor Session – Secondary Causes of Osteoporosis. Montreal, Canada.

International Congress of Endocrinology – What Can Be Achieved with Anti-Resorptive Drugs? Rio de Janeiro, Brazil.

International Congress of Endocrinology – Meet the Professor Session – Osteoporosis in Men. Rio de Janeiro, Brazil.

### Robin Daly

Diabetes Australia/Deakin University: Public Panel Discussion – Invited Panel Expert, Six Degrees of Diabetes.

Peter James Centre. Exercise – The Best Medicine for Preventing Osteoporosis, Falls and Fractures.

Osteoporosis Victoria/Arthritis Victoria. Braking Osteoporosis – The Role of Exercise for Preventing Fractures.

ANZBMS/Osteoporosis Australia Clinical Update on Osteoporosis, Melbourne. Exercise and Fracture Prevention.

Osteoporosis Victoria/Arthritis Victoria Update Session. Recent Advances for Preventing Osteoporosis.

Jean Hailes Foundation. Better Bones of Life. Osteoporosis Women's Update – Videoconference.

Australian Association of Exercise and Science in Sport. The role of exercise and nutrition for optimizing musculoskeletal health in the elderly.

### Claudia Gagnon

Osteoporosis Victoria/Arthritis Victoria. Management of Osteoporosis.

## Abstracts

International Osteoporosis Foundation, IOF World Congress on Osteoporosis, Bangkok, Thailand

**Daly R**, Kukuljan S, Nowson C, Sanders K, Bass S, Nicholson G, Peake J. Changes in bone mass, structure and strength in response to exercise and the association with low grade systemic inflammation: An 18-month randomised controlled trial.

International Osteoporosis Foundation, IOF World Congress on Osteoporosis, Bangkok, Thailand  
Ducher G, **Daly R**, Naughton GA, Eser P, English R, Patchett A, Gravenmaker KJ, Seibel M, Javaid A, Telford RD, Bass S. Physical fitness is associated with greater bone strength in prepubertal children, irrespective of their body weight.

International Osteoporosis Foundation, IOF World Congress on Osteoporosis, Bangkok, Thailand.  
Ducher G, **Daly R**, Black J, Turner C, Bass S. Effects of repetitive loading on bone mass and geometry during growth is site-and gender-specific.

American Society of Bone and Mineral Research, 30th Annual Scientific Meeting, Montreal, USA, 12-16 Sept. **Daly R**, Kukuljan S, Nowson C, Bass S, Sanders K, Nicholson G. Effects of a Multi-component Exercise Program on QCT Bone Geometry and Strength and Physical Performance in Older Men: An 18-month RCT.

30th Annual Scientific Meeting, Montreal, USA, 12-16 Sept. Ducher G, **Daly R**, Naughton G, Eser P, English R, Patchett A, Gravenmaker K, Seibel M, Javaid A, Cunningham R, Telford R, Bass S. Overweight children are more at risk to sustain a forearm fracture due to poor bone strength relative to body weight. American Society of Bone and Mineral Research.

American Society of Bone and Mineral Research, 30th Annual Scientific Meeting, Montreal, USA, 12-16 Sept. Ducher G, **Daly R**, Black J, Turner C, Bass S. The influence of muscle size and strength on changes in bone mass and size during growth and in response to exercise: A Longitudinal Study.

Australian and New Zealand Bone and Mineral Society (ANZBMS) Annual Meeting, Melbourne, August.  
Ducher G, **Daly R**, Naughton GA, Eser P, English R, Patchett A, Gravenmaker KJ, Seibel M, Javaid A, Telford RD, Bass S. The difference in bone strength between overweight children and normal-weight peers is larger in the lower limbs than in the upper limbs.

Asics Conference of Science and Medicine in Sports, Hamilton Island. Ducher G, Black J, **Daly R**, Turner C, Bass S. Tennis playing initiated before puberty leads to greater skeletal benefits in peri-pubertal boys than girls when training is maintained.

International Osteoporosis Foundation Annual Meeting, 4-7 December, Bangkok, Thailand.  
**Gagnon C**, Kalogerakis G, Jung C, Wong R, Sims NA, Ng KW, **Ebeling PR**. Teriparatide-induced alkaline phosphatase and osteoblast activity in an adult with hypophosphatasia.

## Book Chapters

Bass S, **Daly R**, Blimkie CJR. "Growing a healthy skeleton: exercise the primary driving force." In: The Child and Adolescent Athlete. H. Heibstret and O. Bar-Or (Eds). Volume VIII of the Encyclopedia of Sports Medicine. An IOC Medical Commission Publication. London; Blackwell Scientific Publications, 2008.

**Ebeling, PR**. Transplantation osteoporosis. Primer on the metabolic bone diseases and disorders of mineral metabolism. 7th Edition. ASBMR Chapter 61. 2008 pp. 279-285.



# GASTROENTEROLOGY

## Researchers

**Ian Kronborg:** Director of Gastroenterology Department

**Associate Professor Alex Boussioutas:** Deputy Director of Gastroenterology Department

**Steven Kolt:** Senior Gastroenterologist

**Geeta Srivatsa:** Senior Gastroenterologist

**Shamilah Lachal:** Senior Gastroenterologist

**Thai Quach:** Senior Gastroenterologist

**Niranjan Arachchi:** Senior Gastroenterologist

**Simon Zanati:** Senior Gastroenterologist

**Robert Chen:** Senior Gastroenterologist

**Peter Tagkalidis:** Senior Gastroenterologist

**Daljean Sandhu:** Senior Gastroenterologist

**Geoff Francis:** Fellow

**Ben Allen:** Registrar

**Bronte Holt:** Registrar

**Marian Croft:** Research Coordinator

**Kerrie Curin:** Research Coordinator

## Current Research

**A Single Arm, Open Label, Pilot Study Evaluating The Efficacy And Safety Of Directly Observed Peg interferon Alfa 2a With Ribavirin In Conjunction With A Peer Counsellor In Patients Actively Injecting Drugs Who Have Chronic Hepatitis C (HCV) And Attend A Drug And Alcohol Centre.**

Ian Kronborg

*Collaborators: RMH, Nepean Hospital, First Step Clinic.*

**A Randomized, Double-blind, Multicenter Phase III Study of Brivanib versus Placebo as Adjuvant Therapy to Trans-Arterial Chemo-Embolization (TACE) in Patients with Unresectable Hepatocellular Carcinoma (The BRISK TA Study) CA182-037.**

Ian Kronborg

**A Phase III, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction and Maintenance of Clinical Response and Remission by MLN0002 in Patients with Moderate to Severe Crohn's Disease (C13007).**

Alex Boussioutas

**A Phase 3, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction and Maintenance of Clinical Response and Remission by MLN0002 in Patients with Moderate to Severe Ulcerative Colitis (C13006).**

Alex Boussioutas

**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 weeks 0, 2 and 4 in subjects with moderately to severely active Crohn's disease.**

Alex Boussioutas

**A Phase IIb, Multicenter, Randomized, Double-blind, Placebo-controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Ustekinumab Therapy in Subjects with Moderately to Severely Active Crohn's Disease Previously Treated with TNF Antagonist Therapy.**

Alex Boussioutas

**Best-Australia. A phase II study of non-endoscopic screening for Barrett's Oesophagus (HREC: 2009.017).**

Alex Boussioutas

*Collaborators: University of Western Australia, University of Cambridge, UK*

**HREC 2008.216 Australian Multicentre Colonic Endoscopic Mucosal Resection (EMR) Study.**

Robert Chen

Simon Zanati

**A prospective controlled study on the effect of bowel preparation on the diagnostic yield of capsule endoscopy.**

Robert Chen

## 2008 Achievements

### Publications

Wang D, Teichtahl H, Goodman C, Drummer O, Grunstein RR, **Kronborg I**. Subjective daytime sleepiness and daytime function in patients on stable methadone maintenance treatment: possible mechanisms. *J Clin Sleep Med*. 2008 Dec 15;4(6):557-62.

Busuttill RA, **Boussioutas A**. Intestinal metaplasia: a premalignant lesion involved in gastric carcinogenesis. *J Gastroenterol Hepatol* 2009;24:193-201.

Howlett M, Giraud AS, Lescesen H, Jackson CB, Kalantzis A, Driel IR, Robb L, Hoek MV, Ernst M, Minamoto T, **Boussioutas A**, Oshima H, Oshima M, Judd LM. The Interleukin-6 Family Cytokine Interleukin-11 Regulates Homeostatic Epithelial Cell Turnover and Promotes Gastric Tumor Development. *Gastroenterology* 2008.

Burn, J., Bishop, T. et al **CAPP 2 Investigators\***. Effect of Aspirin or Resistant Starch on Colorectal Neoplasia in the Lynch Syndrome. *New Engl J Med* 2008; 359:2567-78.

Sadeghi S, Bain CJ, Pandeya N, Webb PM, Green AC, Whiteman DC **Australian Cancer Study#**. Aspirin, nonsteroidal anti-inflammatory drugs, and the risks of cancers of the esophagus. *Cancer Epidemiol Biomarkers Prev* 2008;17:1169-78.

Doecke J, Zhao ZZ, Pandeya N, **Australian Cancer Study#** et al. Polymorphisms in MGMT and DNA repair genes and the risk of esophageal adenocarcinoma. *Int J Cancer* 2008;123:174-80.

Whiteman, D. C., Sadeghi, S., Pandeya, N., Smithers, B. M., Gotley, D. C., Bain, C. J., Webb, P. M., and Green, A. C. **Australian Cancer Study#**. Combined effects of obesity, acid reflux and smoking on the risk of adenocarcinomas of the oesophagus. *Gut* 2008 57, 173-180.

# Acknowledged as part of the Australian Cancer Study.

\* Acknowledged as part of the CAPP2 Investigators.

### Grants

2008-2010: ARC Discovery Project DP0879698: Functional nonlinear optical endoscopy the third generation optical endoscopy technology toward early cancer detection at a cellular level. CIA M Gu, CIB **A Boussioutas** CIC H Xie (3 years: \$640,000).

2007-2009: NHMRC Project grant 433617: Validation of STAT3 as a therapeutic target in diseases arising from its inappropriate activation by gp130 cytokines. CIA M. Ernst; CIB P. Hoffman. AI **A. Boussioutas** (3 years: \$645,250).

2007-2009: NHMRC Project Grant 454584: Molecular markers of the progression from intestinal metaplasia to gastric cancer. CIA **A. Boussioutas**; CIBA. Giraud; CIC D. Bowtell (2007-\$183,500, 2008-\$188,500, 2009-\$163,500).

### Book Chapters

Chapter: Advances in Genomics and Proteomics of Gastric Cancer. **Alex Boussioutas** and Patrick Tan in "Biology of Gastric Cancer", Springer, 2008.



# GENERAL MEDICINE

## PROFESSOR EDWARD JANUS

In the Greater Green Triangle Diabetes Prevention Program (GGT DPP) Professor Janus and his co-researchers showed that groups of 10 to 14 individuals found to be at high risk of developing diabetes, as estimated by the FINDRISK test, could undertake a three month Health Action Process with a facilitator and modify their diet and lifestyle especially exercise. This reduced their weight and waist circumference, as well as their blood pressure, lipids and glucose levels. The changes attained at three months were sustained at 12 months and also at 30 months.

This had earlier been done in the USA and Finland on a one on one counseling basis with a 60% reduction in the subsequent development of type 2 diabetes. The much cheaper and successful (GGT DPP) projected a 40% reduction in progression to diabetes and is now being rolled out as the Life! Diabetes Prevention Project in Victoria and elsewhere in Australia. In Victoria 25,000 at risk individuals will be enrolled and Professor Janus and his co-investigators have an NHMRC grant to evaluate this population intervention and its cost effectiveness. This involves a collaboration between the GGT University Department of Rural Health, health economists and the University of Melbourne Centre for Research Excellence in Diabetes.

He is also involved in international collaboration with colleagues of the University of Hong Kong, the National Institute of Public Health in Helsinki, Finland and the George institute in Sydney to understand the worldwide implications of obesity and major cardiovascular risk factors. This requires pooling of large well characterized data sets from many countries giving information on over 30,000 people. Included are the 2,900 subjects he studied in Hong Kong in 1994 – 1996 in the Cardiovascular Risk Factor Study which is still continuing. He recently received a Research Excellence award from the Hong Kong government for his contribution study which has resulted in over 40 publications.



The Department of General Medicine at Western Health cares for predominately older patients who commonly have more than one medical problem and socio economic issues. The physicians who work in the department all have expertise in a subspecialty and this enhances the ability of the department to deliver patient care as well as teaching and training.

Translational research involves converting laboratory and clinical trial research findings into clinical applications at individual patient and population levels. This often requires a multidisciplinary approach and multi centre collaboration.

Currently the Department of General Medicine is working on VTE prophylaxis, osteoporosis and heart failure management improvements so that the evidence, again abundant, can be applied to improve care. In addition many of the consultants in the department have research primarily focused in their subspecialty however increasingly they collaborate to maximize the potential of their research.

## Researchers

### **Professor Edward Janus:**

Director of General Medicine

### **Mahesan Anpalahan:**

General Physician (aged care)

### **Harin Karunajeewa:**

Infectious Diseases Consultant

### **Keith Lim:** Rheumatologist

(see Rheumatology Section for current research work)

## Advanced Trainee Medical Registrars

**Steve Marasovic** (Senior Medical registrar)

### **Madeline Healey**

(General Medicine and Rheumatology)

### **Margaret Bilksa**

(Geriatrics and General Medicine)

**Sam Kaldas** (General Medicine)

## Current Research

### **Improving Osteoporosis Recognition and Management at Western Health in general medicine and orthopaedics.**

Edward Janus, Madeline Healey, Steve Marasovic

### **Quality of Communication Between Primary and Secondary Care.**

Mahesan Anpalahan, Edward Janus

### **Audit of the Complications of Anticoagulation in elderly patients.**

Edward Janus, Mahesan Anpalahan, Steven Marasovic, Sam Kaldas

### **A longitudinal study of pathophysiology, management and outcome.**

Harin Karunajeewa

### **Anti-malarial treatments for pregnancy in PNG.**

Harin Karunajeewa

## 2008 Achievements

### Publications

C Vaughan, A Kilkinen, B Philpot, J Brooks, A Schoo, T Laatikainen, A Chapman, **E Janus** and J A Dunbar. Physical activity behaviours of adults in the Greater Green Triangle region of rural Australia. *Aust J Rural Health* 2008 16:92-99.

**E Janus**, SJ Bunker, K Mc Namara, TK Laatikainen, AM Kilkinen, S Heistaro, B Philpot and JA Dunbar. The prevalence, detection and treatment of Hypertension in Rural Australia. *Internal Medicine Journal* 2008 38:879-886.

K Hodge, **E Janus**, VSundararajan, S Taylor, W Brand, J Ibrahim, A Wolff. Coordinated anticoagulation management in a rural setting. *Australian Family Physician* 2008 37:280-283.

BMY Cheung, NMS Wat, YB Man, S Tam, CH Cheng, GM Leung, J Woo, **E Janus**, CP Lau, TH Lam, KSL Lam. Relationship between the metabolic syndrome and the development of hypertension in the Hong Kong Cardiovascular Risk Factor Study – 2 (CRISPS2). *American Journal of Hypertension* 2008 21: 17-22.

BMY Cheung, K Leung Ong, RV Cheung, LYF Wong, NMS Wat, S Tam, GM Leung, CH Cheng, J Woo, **E Janus**, CP Lau, TH Lam, KSL Lam. Association between plasma alkaline phosphatase and C-reactive protein in Hong Kong Chinese. *Clin Chem Lab Med* 2008 46(4):523-527.

The Obesity in Asia Collaboration: R Huxley, F Barzi, CMY Lee, **E Janus**, TH Lam, I Caterson, F Azizi, S Lear, J Patel, J Shaw, J Adam, SW Oh, JH Kang, P Zimmet, M Woodward. Is central obesity a better discriminator of the risk of hypertension than body mass index in ethnically diverse populations? *Journal of Hypertension* 2008 26:169-177.

R Huxley, W P T James, F Barzi, J V Patel, S A Lear, P Suriyawongpaisal, **E Janus**, I Caterson, P Zimmet, D Prabhakaran, S Reddy, M Woodward on behalf of the Obesity in Asia Collaboration. Ethnic comparisons of the cross-sectional relationships between measures of body size with diabetes and hypertension. *2008 Obesity reviews* 9 (Suppl.1), 53-61.

R Nyamdorj, Q Qiao, TH Lam, J Tuomilehto, SY Ho, J Pitkaniemi, T Nakagami, V Mohan, **E Janus** and SRG Ferriera for the DECODA Study Group. BMI compared with central obesity indicators in relation to diabetes and hypertension in Asians. *Obesity* 2008 16: 1622-1635.

BMY Cheung, NMS Wat, AWK Tso, S Tam, GN Thomas, GM Leung, HF Tse, J Woo, **E Janus**, CP Lau, TH Lam, KSL Lam. Association between Raised Blood Pressure and Dysglycemia in Hong Kong Chinese. *Diabetes Care* 2008 31:1889-1891.

J Dunbar, P Reddy, N Davis-Lamellose, B Philpot, T Laatikainen, A Kilkinen, S Bunker, J Best, E Vartiainen, S Lo, **E Janus**. Depression: an important co-morbidity with metabolic syndrome in a general population. *Diabetes Care* 2008 31:2368-2373.

P Reddy, JA Dunbar, A O'Neill, MA Morgan, AM Wolff, **E Janus**. Depression in acute coronary syndrome: Has the evidence been implemented? *Aust J Rural Health* 2008 16: 245-246.

C Do, M Anpalahan, **E Janus**. Caution is advised in the treatment of chronic hyponatraemia. *Internal Medicine Journal (Letter to the editor)* 2008 38:929-930.

**Anpalahan M**, Gibson S.J. Geriatric Syndromes As Predictors Of Adverse Outcomes Of Hospitalisation. *Internal Medicine Journal* 2008; 38(1):16-23.

**Anpalahan M**, Gibson S.J. Death As An 'Adverse Outcome'. *Internal Medicine Journal* 2008; 38(11): 873-874. (Letter).

Do C, **Anpalahan M**, Janus E. Caution Is Advised In The Management Of Hyponatraemia. *Internal Medicine Journal* 2008; 38(12): 929-930. (Letter).

Appiah-Kubi L.S, **Anpalahan M**. Pitfalls In Managing Falls. *Australian Family Physician* 2008; 37: 42-44.

**Karunajeewa HA**, Mueller I, Senn M, Lin E, Law I, Gomorrai S, Oa O, Griffin S, Kotab K, Suano P, Tarongka N, Ura A, Lautu D, Page-Sharp M, Wong R, Salman S, Siba P, Ilett KF, Davis TME. A trial of combination antimalarial therapies in children from Papua New Guinea. *New England Journal of Medicine*. 2008; 359 (24): 2545-2557.

Batty KT, Moore BR, Stirling V, Ilett KF, Page-Sharp M, Shilkin KB., Mueller I, **Karunajeewa HA** and Davis TME. Toxicology and Pharmacokinetics of Piperazine in Mice. *Toxicology and Applied Pharmacology*. 2008. 249; p. 55-61.

Gomes M, Ribeiro I, Warsame M, **Karunajeewa H** and Petzold M. Rectal artemisinins: a review of efficacy and safety from individual patient data in clinical studies. *BMC Infectious Diseases*. 2008. 8, 39.

Law I, Ilett K F, Hackett LP, Page-Sharp M, Baiwog F, Gomorrai S, Mueller I, **Karunajeewa HA**, Davis TME. Transfer of chloroquine and desethylchloroquine across the placenta and into milk in Melanesian mothers. *British Journal of Clinical Pharmacology*. 2008. 65 (5); p. 674-679.

**Karunajeewa HA**, Ilett KF, Mueller I, Siba P, Law I, Page-Sharp M, Lin E, Lammey J, Batty KT, Davis TME. Pharmacokinetics and efficacy of piperazine and chloroquine in Melanesian children with uncomplicated malaria. *Antimicrob Agents Chemother*. 2008. 52(1): p. 237-43.

#### Grants

**E Janus**: Sanofi-Aventis Australia Pty Ltd., 2007-08. Venous Thromboembolism Taskforce Audit. \$49,500.

**E Janus**: and P R Ebeling. Sanofi-Aventis Australia Pty Ltd. 2008. Venous thromboembolism prevention and detection and management of osteoporosis. \$50,000.

**H Karunajeewa**: Projects related to severe childhood infectious disease in Papua New Guinea and clinical pharmacology of new anti-malarial drugs in Papua New Guinean children and pregnant women: Australian NHMRC grant \$466, 784.

**H Karunajeewa**: Projects related to the clinical pharmacology of new anti-malarial drugs in Papua New Guinean children and pregnant women: Australian National Health and Medical Research Council grant \$450 000.

#### Awards

**E Janus**: Research Excellence award from the Hong Kong government for contribution study which has resulted in over 40 publications.

#### Conference and Seminar Presentations

**E Janus**: The 2nd Joint Meeting between APSAVD and The 6th Annual Scientific Meeting of Thai Atherosclerosis Society. "New Horizon and Novel Therapy". Thailand January. Title: Clopidogrel: Past, present and Future Directions. Title: Detection and Treatment of Insulin Resistance.

**E Janus**: 6th Congress of the Asian Pacific Society of Atherosclerosis and Vascular Diseases & 10th Hong Kong Diabetes and Cardiovascular Risk Factors East Meets West Symposium, Hong Kong September 2008. Title: Case Finding and Diabetes Prevention – A National Programme.

Asia Pacific International Conference on Travel Medicine, Melbourne, February 2008.

**Karunajeewa HA**. Country in focus session: "Papua New Guinea".

American Society of Tropical Medicine and Hygiene annual meeting, New Orleans, USA, December 2008. **Karunajeewa HA**, Mueller I, Page-Sharp M, Law I, Salman S, Gomorrai S, Lammey J, Rogerson S, Siba P, Ilett KF, Davis TME. Pharmacokinetic properties of chloroquine and sulfadoxine-pyrimethamine in pregnancy.

XVIIth International Congress of Tropical Medicine and Malaria, Jeju Island, South Korea, October 2008. **Karunajeewa HA**, Mueller I, Senn M, Lin E, Law I, Gomorrai S, Oa O, Lautu D, Page-Sharp M, Wong R, Salman S, Siba P, Ilett KF, Davis TME. Pharmacokinetic and parasitological determinants of the efficacy of dihydroartemisinin-piperazine for treatment of P.falciparum in Papua New Guinean children.

#### Book Chapters

**H Karunajeewa** has written a chapter for the reference book, "Kucers' Antibiotics".

# INTENSIVE CARE



The Intensive Care Unit is located at Western Hospital Footscray campus of Western Health. The ICU is funded for 10 ICU equivalent beds and provides the only adult critical care service in Melbourne's West. The unit has 14 bed bays and these are used to accommodate a mixture of high dependency and intensive care patients. In 2008 over 800 critically ill patients with surgical and medical conditions were treated and approximately 10% of all admitted patients participated in the unit's research activities.

## Researchers

**Craig French:** Director of Intensive Care Department

**Forbes McGain:** Intensivist

**Heike Raunow:** Research Nurse

## Current Research

**A pilot crossover randomized controlled trial of angiotensin II in critically ill patients with severe sepsis and acute renal failure.**

Forbes McGain

**A randomized, double-blind, placebo-controlled, multicenter, Phase III study of drotrecogin alfa (activated) administered as a continuous 96-hour infusion to adult patients with septic shock.**

Craig French

**A phase II, multicenter, randomized, double-blinded, comparative Study of the safety and efficacy of 2 doses of Tigecycline versus Imipenem/Cilastating for the treatment of subjects with Hospital\_Acquired Pneumonia.**

Craig French

**A multi-centre, randomised controlled trial of early goal-directed therapy in patients presenting to the Emergency Department with severe sepsis in Australasia.**

Craig French

**Testing a mobile-phone pulse oximeter for developing countries.**

Forbes McGain

**TAME; Time and Money Evaluation Study; An Audit of the time and financial Costs involved in the review process of Multi-Centre trials in Australia and New Zealand.**

Heike Raunow

**ANZICS Point Prevalence Program.**

Craig French

*Collaborators: ANZICS*

**An audit of waste generated by the intensive care unit.**

Forbes McGain

**An Investigation of Time to Receipt of Antibiotics in Patients with Septic Shock.**

Forbes McGain

*Collaborators: ANZICS (Australian and New Zealand Intensive Care Society)*

**Impact and Risk Factors Associated with Influenza H1N1 in Australian Hospital System, Epidemic (INFINITE).**

Craig French



## 2008 Achievements

### Publications

**McGain F**, Cretikos M.A, Jones D, Van Dyk S, Buist M.D, Opdam H, Pellegrino V, Robertson M.S, Bellomo R. Documentation Of Clinical Review And Vital Signs After Major Surgery. *Medical Journal of Australia*. 2008; 189(7):380-3.

**McGain F**, Clark M, Williams T, Wardlaw T. Recycling Plastics From The Operating Suite. *Anaesth Intensive Care*. 2008 Nov; 36(6):913-4.

Apte Y, Bellomo R, Warrillow S, Goldsmith D, Gillies M, **McGain F**. Pilot Randomised Double-Blind Controlled Trial Of High-Dose Spironolactone In Critically Ill Patients Receiving A Frusemide Infusion. *Crit Care Resusc*. 2008 Dec; 10(4):306-11.

Egi M, Bellomo R, Stachowski E. **French C.J.** Hart G.K. Hegarty C. Bailey M. Blood Glucose Concentration And Outcome Of Critical Illness: The Impact Of Diabetes. *Critical Care Medicine*. 2008; 36(8):2249-55.

Hicks P, Cooper D.J, Webb S, Myburgh J, Seppelt I, Peake S, Joyce C, Stephens D, Turner A. **French C.** Hart G, Jenkins I, Burrell A. The Surviving Sepsis Campaign: International Guidelines For Management Of Severe Sepsis And Septic Shock: 2008. An Assessment By The Australian And New Zealand Intensive Care Society. *Anaesthesia and Intensive Care*. 2008; 36(2) 149-151.

Bellomo R, Cass A, Cole L, Finfer S, Gallagher M, Goldsmith D, Myburgh J, Norton R, Scheinkestel C, Ali D, Banerjee A, Bhonaqiri D, Blythe D, Botha J, Cade J, Dobb G, Eddington J, Flabouris A, **French C**, Garrett P, Henderson S, Ihle B, Joyce C, Kalkoff K, Lipman J, Mc Arthur C, Mc Guinness S, Milliss D, Mitchell I, Morgan J, Nair P, Orford N, Raza A, Shehabi Y Tobin A Totaro R, Turner A, Wright T. RENAL Study Investigators. Design And Challenges Of The Randomized Evaluation Of Normal Versus Augmented Level Replacement Therapy (RENAL) Trial: High-Dose Versus Standard-Dose Hemofiltration In Acute Renal Failure. *Blood Purification*. 2008; 26(5):407-16.Review.

Bellomo R, Cass A, Cole L, Finfer S, Gallagher M, Goldsmith D, Myburgh J, Norton R, Scheinkestel C, Ali D, Banerjee A, Bhonaqiri D, Blythe D, Botha J, Cade J, Dobb G, Eddington J, Flabouris A, **French C**, Garrett P, Henderson S, Ihle B, Joyce C, Kalkoff K, Lipman J, Mc Arthur C, Mc Guinness S, Milliss D, Mitchell I, Morgan J, Nair P, Orford N, Raza A, Shehabi Y Tobin A Totaro R, Turner A, Wright T. RENAL Study Investigators. Renal Replacement Therapy For Acute Kidney Injury In Australian And New Zealand Intensive Care Units: A Practice Survey. *Critical Care & Resuscitation*. 2008; Sep 10(3):225-30.

Meade M.O.; Cook D.J.; Guyatt G.H; Slutsky A.S; Arabi Y.M; D. Cooper J; Davies A.R; Hand L.E.; Zhou Q; Thabane L; Austin P; Lapinsky S; Baxter A; Russell J; Skrobik Y.; Ronco J.J.; Stewart T.E, **French C**. Lung Open Ventilation Study Investigators. Ventilation Strategy Using Low Tidal Volumes, Recruitment Maneuvers, And High Positive End-Expiratory Pressure For Acute Lung Injury And Acute Respiratory Distress Syndrome: A Randomized Controlled Trial. *JAMA*. 2008; Feb 299(6):637-45.

### Conference and Seminar Presentations

2008 ANZICS Research Coordinators Day  
**H. Raunow**. Victorian Association of Research Nurses, Victorian Initiatives on RC position descriptions, enterprise agreements and more.

### A Prospective Observational Study of Blood and Blood Product Transfusion Practices in Australian Intensive Care Units.

Craig French completed 2008  
*Collaborators: ARCBS (Australian Red Cross Blood Service), ANZIC-RC (Australian and New Zealand Intensive Care Research Centre and Monash University).*

### A randomised Evaluation of Normal vs Augmented level of Renal Replacement Therapy The Renal study.

Craig French

### A multi-centre, open label, randomised controlled trial of two target ranges for glycaemic control in Intensive Care Unit patients (NICE study).

Craig French

### The early nasojejunal tube to meet energy requirements in Intensive Care study The ENTERIC study.

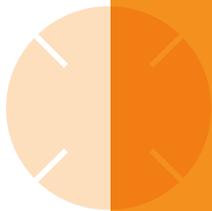
Craig French

### Future Research Objectives

Planned future research activities include the investigation of fluid resuscitation of the critically ill with colloids or crystalloids, sodium bicarbonate use in renal failure and delirium and dexmedetomidine.



# NEURO DEVELOPMENTAL CLINIC



Neurodevelopmental research is conducted at Western Health through the Neurodevelopmental Clinic at Sunshine Hospital. The Neurodevelopmental Clinic (formerly known as the Learning Difficulties Clinic) offers a multi-disciplinary approach to the assessment and intervention of children with a suspected neurodevelopmental disorder. These include learning disabilities, attention deficit/hyperactivity disorder, pervasive developmental disorders (Autism, Asperger's Syndrome, PDD-NOS), epilepsy, communication disorders (Receptive, Expressive and Pragmatic Language Disorders), and prematurity and low birth weight. Children can also present with a failure to develop cognitive, communication, motor or socialisation skills throughout the school-age years that is due to an unexplained cause or origin, and that with remediation has not ameliorated. Clinicians associated with the service include a Neuropsychologist, Speech Pathologist, Social Worker, Occupational Therapist, and Audiologist from the Children's Allied Health Outpatients Unit.

As the Clinic conducts comprehensive and detailed assessments with a wide range of children, it has presented an excellent opportunity to further investigate different disorders of childhood. In line with this, the Clinic has compiled a database of over 360 children since its inception. This allows us to examine the relationships between different factors contributing to conditions, such as academic (reading, spelling, math), language or motor co-ordination disorders. The extensive range of children seen in the Paediatric Neuropsychology Department and the Children's Allied Health Outpatient Unit will also allow us to conduct an investigation this year examining subtypes of Autism and Pervasive Developmental Disorders, as well as long term outcomes for children with a diagnosis of epilepsy. Furthermore, it is also hoped that a retrospective study examining the long-term outcomes of children seen in the clinic will allow a unique insight into the effects of their learning disabilities on their life and functioning when older.

## DR. RENEE TESTA

Dr. Renee Testa is a Senior Paediatric Clinical Neuropsychologist and the Co-ordinator of the Neurodevelopmental Clinic at Sunshine Hospital. Her clinical area of expertise is childhood neurodevelopmental disorders, and includes children experiencing a wide range of cognitive, behavioural and emotional/psychological disturbances. Dr. Testa is also employed at the Melbourne Neuropsychiatry Centre (MNC) as a Research Fellow, which comprises several roles including neuropsychological consultation for research projects and journal papers, in addition to the undertaking of research within the clinical neurodevelopmental setting at Sunshine Hospital. Dr. Testa is also a Lecturer and course component co-ordinator (Paediatric Neuropsychology) at Monash University for the Doctoral Clinical Neuropsychology program. She is also currently supervising several Clinical Doctoral students, as well as PhD students across a wide range of disorders including Bipolar disorder, Childhood Schizotypal Disorder, Autism, Learning Disabilities, Traumatic Brain Injury and Executive functions, and Epilepsy.

### Researchers

**Dr. Renee Testa:** Senior Paediatric Neuropsychologist, Co-ordinator of the Neurodevelopmental Clinic

**Nola Ross:** Senior Paediatric Neuropsychologist

**Jan Mathes:** Senior Paediatric Occupational Therapist

**Anna Williamson:** Paediatric Occupational Therapist

**Ursula Piper:** Paediatric Occupational Therapist

**Caroline Dewar:** Social Worker

Clinical Neuropsychology Students (Monash University)

**Kimberley**

**Amy Lee**

**Emra Oguzkaya**

**Upeka Embuldeniya**

### Current Research

**Are children presenting with abnormal developments in social, behaviour and communication domains a pre-cursor to a mental illness or autism spectrum disorder diagnosis?**

Renee Testa

Nola Ross

*Collaborators: Melbourne Neuropsychiatry Centre, Melbourne University, MH, Monash University and Monash Medical Centre*

**An examination of developmental trajectories and presence of subtypes in high-functioning autistic children.**

Renee Testa

Kimberley Meates

*Collaborators: Monash University, Melbourne Neuropsychiatry Centre, Melbourne University*

**What underlying cognitive constructs contribute to Reading and Spelling Disorders, and what is their association with Language and Motor Dysfunctions?**

Renee Testa, Nola Ross

Amy Lee

*Collaborators: Monash University*

**Cognitive Effects of Age of Seizure Onset in Children with Symptomatic Partial Epilepsy.**

Renee Testa

Upeka Embuldeniya

*Collaborators: RCH, Monash University*

**Memory Functioning in Children with Symptomatic Partial Epilepsy.**

Renee Testa

Emra Oguzkaya

*Collaborators: RCH, Monash University*

### Future Research Objectives

Furthering Dr. Testa's association with the Melbourne Neuropsychiatry Centre and Monash University, unique research into early correlates of mental illness in primary school children is currently underway. A project is being developed that will examine children presenting with odd and unusual social, behavioural and communication impairments that do not readily meet any DSM-IV diagnostic criteria. We are aiming to comprehensively assess this cohort to determine whether these children may be experiencing a subsidiary diagnosis of an Autism Spectrum Disorder, or whether these children are demonstrating early signs of a psychiatric illness that may fully develop in adolescence or adulthood. We also aim to conduct a prospective study examining children who are seen through the Clinic or Unit presenting with unusual motor abnormalities, which has also been demonstrated to be an early indicator of later neuropsychiatric disorders.

**Western Health Stroke Research Unit** recruits a very high number of stroke and neurology patients to international randomised trials in Australia.

Since 2007, our research team has been active in central pain research through the guidance of the previous head of department, Professor Robert D. Helme. We continue to work in clinical and neurophysiologic characteristics of central pain through collaboration with pain researchers at National Ageing Research Institute and Howard Florey Institute in Melbourne.

Three Sri Lankan physicians with an interest in stroke care visited our unit in March 2008. Since then, we've been involved in setting up a model stroke unit in a tertiary hospital in Sri Lanka. We've also been instrumental in setting up the first international stroke conference in Sri Lanka through collaboration with the Association of Sri Lankan Neurologists.

#### Researchers

**Zelko Matkovic:** Head of Department of Neurology

**Tissa Wijeratne:** Head of Stroke Unit & Stroke Research Unit

**Michael Poon:** Neurologist

**Grant Scott:** Neurologist

**Michael Tan:** Senior Registrar in Neurology

#### Research Coordinators

**Sherisse Celestino**

**Lyndy Pascoe**

**Ema Pitts**

#### Neuroscientists

**Ashwini Chandra**

**Natalie Teasdale**

#### Current Research

**A prospective, Randomised, Double-Blind, Double-Dummy, Parallel-Group, MultiCenter, Event-Driven, Non-inferiority Study Comparing the Efficacy and Safety of Once-Daily Oral Rivaroxaban (Bay 59-7939) with Adjusted – Dose Oral Warfarin for the Prevention of Stroke and Non-Central Nervous System Systemic Embolism in Subjects with Non-Valvular Atrial Fibrillation.**

Tissa Wijeratne

**The Prevention of Cerebrovascular and Cardiovascular Events of Ischemic Origin with Terutroban in Patients with a History of Ischemic Stroke or Transient Ischemic Attack (PERFORM) Study.**

Tissa Wijeratne

**(IRIS) A randomised, placebo-controlled trial of pioglitazone, compared with placebo, for prevention of stroke and myocardial infarction after ischemic stroke and transient ischemic attack.**

Tissa Wijeratne

*Collaborators: Yale University*

**ARCH: An open label, Randomised, multicentred, controlled trial to test the null hypothesis that Warfarin or Clopidogrel and Aspirin in patients with a prior ischemic stroke, transient ischemic attack or peripheral embolism associated with proximal aortic plaque with complex features are equally effective in preventing subsequent stroke or vascular events.**

Tissa Wijeratne

**THE BEGIN STUDY: Betaferon treatment and Exercise data Gathering in early MS is an observational, multicentre, prospective study.**

Tissa Wijeratne

#### Future Research Objectives

We will continue to be active in sponsored projects as well as investigator led projects which include an observational study of neurocysticercosis (we have the largest collection of cases in the country now), clinical and neurophysiologic characteristics of central pain, barriers in use of thrombolytic therapy in ischemic stroke, management of transient ischemic attacks and advocacy. We plan to conduct collaborative work in Sri Lanka in the following areas:

- Epidemiology of stroke and Transient Ischemic Attacks in Mawanella, Sri Lanka (Sri Lankan rural population of 140,000) over a one year period; and
- Epidemiology of neuropathic pain among patients with diabetes in a Sri Lankan tertiary hospital population.

Dr. Sandra Petty joined us as a visiting neurologist recently. She has extensive experience in research in epilepsy and bone health. Dr. Zelko Matkovic is a key member in the epilepsy research group at Melbourne Health. These two neurologists will enhance the research activities in epilepsy through our unit.

We look forward to continuing our contribution to neurophysiology research activities in the future.



# NEUROLOGY AND STROKE

## 2008 Achievements

### Awards

**T Wijeratne** awarded with international fellow status (Fellow, American Heart Association FAHA) in recognition of his collaborative work in improving stroke care in Sri Lanka.

### Conference and Seminar Presentations:

**T Wijeratne** Fifth Asia Pacific Stroke Conference 2008. An oral presentation on incidence of central post stroke pain among Western Health stroke database.

**T Wijeratne** First International Stroke Conference, Colombo, Sri Lanka 2008. An oral presentation on priorities in stroke care.

### Book Chapters:

**Neuroscience Team, Western Health.** Living well with Parkinson's Disease 2008. A 28 page book on Parkinson's disease.

**T Wijeratne** 8 page Stroke Prevention Book. 50,000 copies of this book were freely distributed throughout Sri Lanka.

**T Wijeratne** Series of health related articles on Stroke care, Transient Ischemic Attacks, Headaches, Movement disorders and high blood pressure in two community publications in Australia.

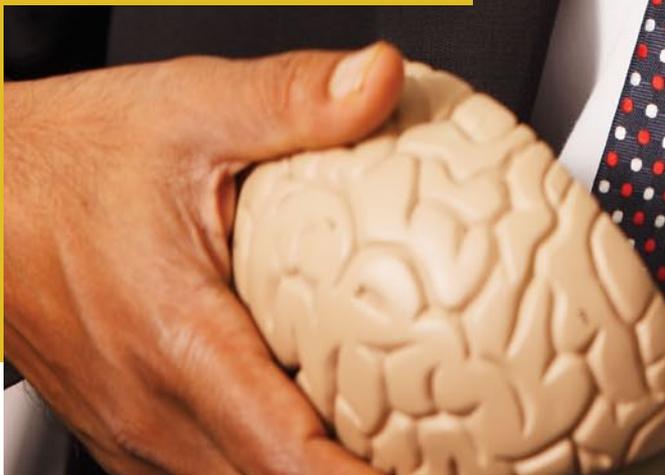
## DR. TISSA WIJERATNE

Dr. Tissa Wijeratne became the first Australian neurologist to graduate from the award winning, Donald M. Palatucci advocacy program at the American Academy of Neurology and has been awarded with international fellow status (Fellow, American Heart Association FAHA) in recognition of his collaborative work in improving stroke care in Sri Lanka.

In January 2009, Dr. Tissa Wijeratne was selected to be an advisor for the Donald M. Palatucci advocacy program at the American Academy of Neurology and in March he became a founding member of the Asia Pacific Advocacy Union for Stroke at the Fifth Asia Pacific Stroke Conference in Manila, Philippine.

A passionate and well-known leader in his field Dr. Tissa Wijeratne presented at the following international conferences in 2008:

Twelveth World Pain Congress, Glasgow  
Fifth Asia Pacific Stroke Conference  
First International Stroke Conference, Colombo, Sri Lanka  
Kandy Society of Medicine, Sri Lanka, March  
Kandy Society of Medicine, Sri Lanka, November  
Fifth Donald M Palatucci Advocacy Forum, Florida





**DIANA HAYES**  
CLINICAL NURSE CONSULTANT/  
STOMAL THERAPY

Diana Hayes is the Editor of the Journal of Stomal Therapy Australia. She is an active researcher and educator and prominent member of Australian Association of Stomal Therapy Nurses.

Qualified Stomal Therapy Nurses work in a clinically advanced practice role. They develop, implement and evaluate strategies for the support, care, education and rehabilitation of anyone anticipating or who has undergone surgery resulting in temporary or permanent bodily waste diversion. They provide clinical assessments and therapeutic management for other specified health and illness presentations.

Stomal Therapy Nurses provide advice to other health care professionals, including surgeons and general practitioners, about the assessment and management of stomas, fistulae, wound and peri-stomal aspects of patient care.

# NURSING

At Western Health we have a very active research community within our nursing staff. Over the last 12 months we have produced research in the areas of intensive care, emergency medicine, paediatrics, infection control and stomal therapy. 2008 was a particularly productive year with major contributions coming from Debra Kerr, an emergency research nurse who under The Joseph Epstein Centre for Emergency Medicine Research (JECMR), to date has published over 40 publications in peer reviewed journals. On completion of her PhD, Debra this year, in 2009 has taken up an academic teaching position in the School of Nursing and Midwifery at Victoria University. In this position Debra will continue to work closely with Western Health on a wide number of nursing projects.

## Researchers

**Anna Green:** ICU Liaison Nurse  
**Debra Kerr:** Emergency Medicine Research Nurse and Deputy Director JECMR (until December 2008)

**Ian Law:** Paediatric Nurse Practitioner  
**Brett Morris:** Clinical Nurse Consultant  
**Fiona Wilson:** Infection Control Manager  
**Diana Hayes:** Clinical Nurse Consultant (Stomal Therapy)  
**Davina Taylor:** Clinical Nurse Consultant (Pain Management)

## Current Research

### Early recognition and management of the deteriorating patient.

Anna Green

*Collaborators: Health Round Table Ltd*

### Effectiveness and Safety of Intranasal Naloxone for Treatment of Opiate Overdose in the Pre Hospital Setting.

Debra Kerr

### The practicality and tolerability of patient-controlled intranasal fentanyl for relieving pain in birthing women.

Debra Kerr

Davina Taylor

### Introducing a Nursing Service Catalogue into the Australian Government Architecture's Services Reference Model.

Debra Kerr

### Implementation of Division Two Medication Endorsement at Western Health.

Douglas Mill

Debra Kerr

*Collaborators: Victoria University*

### Assessment, management and outcome of children who present to the Emergency Department with croup.

Debra Kerr

### The ability of nurse practitioners to safely interpret x-rays in patients presenting to the emergency department with an ankle injury.

Debra Kerr

Ian Law

### A Comparison of screening tools used to identify older inpatients most likely to benefit from a comprehensive geriatric assessment.

Brett Morris

*Collaborators: LaTrobe University*

### Does a modified diet reduce the incidence of people with an ileostomy? A preliminary study.

Diana Hayes

## 2008 Achievements

### 2008 Publications

Grayson ML, Jarvie L, Martin R, Johnson P, Jodoin M, McMullan C, Gregory R, Bellis K, Cunningham K, **Wilson F**, Quin D and Kelly AM, on behalf of the Victorian Quality Council's Hand Hygiene Study Group and Hand Hygiene Statewide Roll-out Group Significant reductions in methicillin-resistant *Staphylococcus aureus* bacteraemia and clinical isolates associated with a multisite, hand hygiene culture-change program and subsequent successful statewide roll-out. *Med J Aust* 2008; 188 (11): 633-640.

**Hayes D.** Does a modified diet reduce the incidence of people with an ileostomy? A preliminary study. *Journal of Stomal Therapy Australia, Volume 28(1) March 2008.*

Kelly AM., Clooney M, **Kerr D**, Ebeling P. When continuity of care breaks down: a systems failure in identification of osteoporosis risk in older patients treated for minimal trauma fractures. *MJA.* 2008; 188: 389-391.

Kelly AM, Clooney M, **Kerr D.** Outcomes of emergency department patients treated for primary spontaneous pneumothorax. *Chest. Chest.* 2008; 134: 1033-1036.

**Kerr D**, Dietze P, Kelly AM, Jolley D. Attitudes of Australian heroin users to peer distribution of naloxone for heroin overdose: Perspectives on intranasal administration. *Journal of Urban Health* 2008;85 (3): 352-360.

**Kerr D**, Jennings P, Kelly AM, Walker T, Edington. Pilot of prehospital thrombolysis in ST elevation myocardial infarction. *Journal of Emergency Primary Healthcare* 2008, 6 (1): 1-9.

Anderson B, Kelly AM, **Kerr D**, Clooney M. Capillary refill time in adults has poor inter-observer agreement. *Hong Kong Journal of Emergency Medicine* 2008, 15 (2): 71-4.

**Kerr D**, Dietze P, Kelly AM. Intranasal naloxone for the treatment of suspected heroin overdose. *Addiction* 2008; 103:379-86.

Kelly AM, **Kerr D**, Clooney M. Impact of oral dexamethasone versus placebo after ED treatment of migraine with phenothiazines on the rate of recurrent headache: a randomised controlled trial. *EMJ* 2008; 25:26-9.

Anderson B, Kelly AM, **Kerr D**, Clooney M, Jolley, D. Impact of patient and environmental factors on capillary refill time in adults. *Journal of Emerg Med.* *Am J Emerg Med* 2008; 26:62-5.

### Awards

**F Wilson.** Sir Richard Stawell Memorial Prize for Best Original Research article "on a medical subject of clinical significance in Medical Journal of Australia in 2008.

**F Wilson.** Wyeth Award presented by AMA (Australia) and the MJA for best scientific article in the MJA for 2008.

**D.Kerr.** Silver Award. "Intranasal naloxone for heroin overdose." Victorian Public Healthcare Awards. Melbourne, September 2008.

### Conference and Seminar Presentations:

**D.Kerr:** College for Ambulance Professionals Annual Conference (ACAP). Melbourne, September 2008. "Effectiveness and safety of intranasal naloxone for the treatment of heroin overdose by paramedics."

**D.Kerr:** International Harm Reduction Conference. Barcelona. Spain.

Randomised Controlled Trial Comparing The Effectiveness and Safety of Intranasal and Intramuscular Naloxone For The Treatment Of Heroin Overdose.

### Abstracts

Society for Academic Emergency Medicine. 2008 Annual Meeting. **Kerr D**, Dietze P, Kelly AM, Jolley D. Attitudes of Australian heroin users to take-home naloxone for heroin overdose and methods of administration. *Acad Emerg Med* 2008; 15 (5 Supplement 1): S80.

Society for Academic Emergency Medicine. 2008 Annual Meeting. **Kerr D**, Kelly AM, Dietze P, Jolley D, Barger B. Effectiveness and safety of intranasal naloxone for treatment of heroin overdose by ambulance officers. *Acad Emerg Med* 2008; 15 (5 Supplement 1): S169.

Society for Academic Emergency Medicine. 2008 Annual Meeting. Mitchell R, Kelly AM, **Kerr D**, Jolley D. Does emergency department workload adversely influence timely analgesia? *Acad Emerg Med* 2008; 15 (5 Supplement 1): S503.





#### ASSOCIATE PROFESSOR MICHAEL GREEN

Associate Professor Green graduated with a Bachelor of Medicine and Bachelor of Surgery from The University of Melbourne in 1972 and became a Fellow of the Royal Australasian College of Physicians (Medical Oncology).

He started his medical career at The Royal Melbourne Hospital in 1973 and went on to become the Medical Registrar in Haematology and Oncology in 1976.

In 1980, he took up a Fellowship in Clinical Oncology, Division of Oncology, New York University Medical Centre. From 1983-1987 he held various positions including Director of Developmental Therapeutics Program, Rita & Stanley H Kaplan Cancer Centre and Assistant Professor, Department of Medicine, Division of Oncology, New York University Medical Centre.

Considered one of the leading authorities on breast cancer, Associate Professor Green has been involved in many initiatives looking at the treatment of breast cancer. He is on the Working Party on Developing Guidelines for the Treatment and Management of Breast Cancer organised by the National Health and Medical Research Council. He is also on the Working Party on Clinical Guidelines for Advanced Breast Cancer set up by the National Breast Cancer Centre. Associate Professor Green is also Chairman of the Breast Cancer Research & Evaluation Committee.

Associate Professor Green has published over 130 articles in peer-reviewed journals.

Associate Professor Green is a board member of the IBCSG (International Breast Cancer Study Group) and represents Australia for research performed by this group. Below is a sample of some of the research Western Health has contributed data to via the IBCSG in 2008.



# ONCOLOGY

Quality of life and quality-adjusted survival (Q-TWiST) in patients receiving dose-intensive or standard dose chemotherapy for high-risk primary breast cancer. *British Journal of Cancer* (2008) 98, 25 – 33.

Adjuvant Chemotherapy With Sequential or Concurrent Anthracycline and Docetaxel: Breast International Group 02 – 98 Randomized Trial. *J Natl Cancer Inst* 2008; 100: 121 – 133.

Letrozole Compared With Tamoxifen for Elderly Patients With Endocrine-Responsive Early Breast Cancer: The BIG 1-98 Trial. *J Clin Oncol* 26: 12 April 20 2008.

Increased Risk of Recurrence After Hormone Replacement Therapy in Breast Cancer Survivors. *J Natl Cancer Inst* 2008;100: 475 – 482.

Distinct Clinical and Prognostic Features of Infiltrating Lobular Carcinoma of the Breast: Combined Results of 15 International Breast Cancer Study Group Clinical Trials. *J Clin Oncol* Vol 26:18 June 20 2008.

Premenopausal endocrine-responsive early breast cancer: who receives chemotherapy? *Annals of Oncology* 19: 1231–1241, 2008.

Extracapsular tumor spread and the risk of local, axillary and supraclavicular recurrence in node-positive, premenopausal patients with breast cancer. *Annals of Oncology* 19: 1393–1401, 2008.

Progress on BIG 1-02/IBCSG 27-02/NSABP B-37, a Prospective Randomized Trial Evaluating Chemotherapy after Local Therapy for Isolated Locoregional Recurrences of Breast Cancer. *Annals of Surgical Oncology* 15(11):3227–3231 September 11, 2008.

The Oncology Haematology Clinical Research Unit was established at Western Health in 1992. The aim of the unit is to improve cancer survival through scientific research into the cause, treatment and response of various types and stages of this disease. The clinical research unit offers the patients of Western Health the opportunity to participate in Australian and world wide clinical trial programs, through first in human, phase I, II, and III, stages of therapeutic exploration.

Our Research partnerships includes; the Cancer Council Victoria, the Australia and New Zealand Breast Cancer Trials Group, the Australian Gastrointestinal Trials Group, Breast Cancer International Research Group, and the Australian and New Zealand Germ Cell Tumour Group.

The Clinical Research Unit at Western Health is also one of the founding members of Cancer Trials Australia; an organisation established to coordinate clinical trial management at its member sites thereby delivering efficient outcomes for sponsor companies and access for patients to new therapeutic regimens in the treatment of their cancer.

The members are currently seven Melbourne and Victorian country based hospitals and two research institutes with international reputations for first class cancer research and treatment.

## Researchers

**Associate Professor Michael Green:**

Director of Oncology Department

**Meron Pitcher:** Director Breast Surgery/  
General surgeon

**S T Fan:** Haematologist Oncologist

**Shirley Wong:** Medical Oncologist

**Richard DeBoer:** Medical Oncologist

**Dishan Gunawardana:** Medical Oncologist

**Lara Lipton:** Medical Oncologist

**William Renwick:** Haematologist

**JC Ding:** Haematologist Oncologist

**David Campbell:** Oncology Research  
Fellow/ Oncologist

## Colorectal Team

**Associate Professor Peter Gibbs:**

Medical Oncologist

**Jayesh Desai:** Medical Oncologist

**Suzanne Kosmider:** Medical Oncologist

**Katherine Field:** Medical Oncologist

## Research Nurses/Coordinators

**Helen Brasier**

**Angela Mellerick****Angela Baugh**

**Catherine Morton**

**Georgina Akers**

**Siobhan Rainford**

**Lisa Wilkinson**

### Current Research

**A phase I First in Human two stage dose escalation study of BNC105P a novel vascular disrupting agent in patients with advanced solid tumours.**

Shirley Wong

**An International, Randomized, Double-blind, Placebo-controlled, Phase II Study of AMG 479 with Exemestane or Fulvestrant in Postmenopausal Women with Hormone Receptor Positive Locally Advanced or Metastatic Breast Cancer.**

Richard De Boer

**VCOG BR2-03: A phase III randomised study to determine whether Zoledronic acid adds to the benefits of chemotherapy and/or hormone therapy in the treatment of women with breast cancer.**

Michael Green

**BEATRICE (PROTOCOL BO 20289): An International Multi-Centre Open-Label 2-Arm phase III trial of adjuvant bevacizumab in triple negative breast cancer.**

Richard De Boer

**Adjuvant Chemotherapies in Resectable Pancreatic Cancer (ESPAC-3v2).**

Lara Lipton

**Randomised comparative study of FOLFOX6m plus SIR-Spheres® versus FOLFOX6m alone as first line treatment in patients with non-resectable liver metastases from primary colorectal cancer.**

Peter Gibbs

**A Phase I clinical trial of SIR-Spheres® microspheres in patients with liver metastases from primary cancer of the pancreas.**

Lara Lipton

**An Open Label Study Treatment Extension Study of AMG 706 (Protocol Number AMG 706 20050130).**

Lara Lipton

**A feasibility study of accelerated BEP as first line chemotherapy for advanced germ cell tumours.**

Shirley Wong

**Phase I Multiple Ascending Dose Study of BMS 754807 in Subjects with Advanced or Metastatic Solid Tumours.**

Lara Lipton

**ANZ Neo Gem – Phase II trial evaluating the efficacy and safety of epirubicin and cyclophosphamide (EC) followed by docetaxel with gemcitabine (DG) (+ trastuzumab if HER2 Positive) as neoadjuvant chemotherapy for women with large operable or locally advanced breast carcinoma (ANZ 0502).**

Meron Pitcher

**Zofast – An Open-Label, Randomized, Multicenter Study to Evaluate the Use of Zoledronic Acid in the Prevention of Cancer Treatment-Related Bone Loss in Postmenopausal Women with ER+ and/or PgR+ Breast Cancer Receiving Letrozole as Adjuvant Therapy.**

Richard DeBoer

**LATER – Randomised double blind trial in postmenopausal women who have completed 5 years of adjuvant endocrine therapy for early, hormone sensitive breast cancer more than one (1) year previous, and who are disease-free at study entry.**

Michael Green

**ALLTO – A randomised, multi-centre, open-label, phase III study of adjuvant lapatinib, trastuzumab, their sequence and their combination in patients with HER2/ErbB2 positive primary breast cancer.**

Michael Green

**FACE – A randomized, multi-center Phase IIIb, open label, study of letrozole vs anastrozole in the adjuvant treatment of postmenopausal women with hormone receptor and node positive breast cancer.**

Richard DeBoer

**BRCA – A randomised phase II pilot trial of carboplatin compared to docetaxel for patients with metastatic genetic breast cancer.**

Shirley Wong

**A Phase III Randomized Open Label Study of Neratinib Versus Lapatinib plus Capecitabine for the Treatment of ErbB-2 Positive Locally Advanced or Metastatic Breast Cancer.**

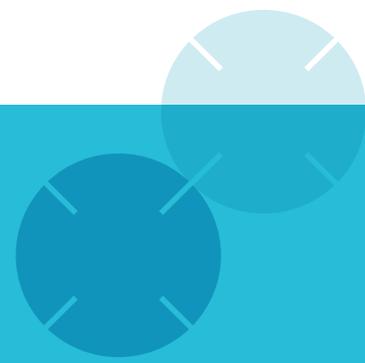
Michael Green

**A Phase III, Randomized, Double-blind, Placebo-Controlled Study of Abiraterone Acetate (CB7630) Plus Prednisone in Patients with Metastatic Castration-Resistant Prostate Cancer (CRPC) Who Have Failed Docetaxel-Based Chemotherapy (Protocol Number: COU-AA-301).**

Shirley Wong

**APEC Study (EMR 62 202-505): An Asia Pacific non-randomized, open-label phase II study evaluating the safety and efficacy of FOLFIRI plus cetuximab (Erbitux®) or FOLFOX plus cetuximab as first-line therapy in subjects with KRAS wild-type metastatic Colorectal cancer.**

Peter Gibbs



**A randomised double-blind, placebo-controlled multi-centre phase III study of Denosumab on prolonging Bone Metastasis-free survival in men with hormone refractory Prostate cancer.**

Shirley Wong

**A randomised 4 arm placebo-controlled phase II trial of AMG 386 in combination with Bevacuzumab and Paclitaxel or AMG 386 plus Paclitaxel as first line therapy in subjects with Her2-Negative metastatic or locally recurrent Breast Cancer.**

Shirley Wong

**A randomised double-blind multicentre study of Denosumab compared with zoledronic acid(zometa) in the treatment of bone metastases in subjects with advanced breast cancer.**

Richard DeBoer

**A phase I trial of Glivec plus mFolfox-Avastin in patients with advanced colorectal cancer.**

Peter Gibbs

**A randomised double blind multicentre study of Denosumab compared with zoledronic acid (Zometa) in the treatment of bone metastases in subjects with advanced (excluding breast and prostate cancer) or Multiple Myeloma.**

Lara Lipton

**Single-Arm, enter Phase II Open-Label Single-Arm, Multi-Center Study to Evaluate the Safety and Efficacy of Sunitinib Malate in Combination with AMG 386 as First Line or Second Line Therapy for Subjects with Metastatic Renal Cell Carcinoma.**

Shirley Wong

**A Phase III, randomized, double-blind, placebo-controlled multi-center study of ASA404 in combination with paclitaxel and carboplatin as first-line treatment for locally advanced or metastatic (stage IIIB/IV) non-small cell lung cancer (NSCLC).**

Richard DeBoer

**A Phase Ib/II Study of AMG 655 in Combination with Paclitaxel and Carboplatin for the First-Line Treatment of Advanced Non-Small Cell Lung Cancer.**

Richard DeBoer

**A Phase III, Randomized, Double-blinded, Parallel Group, Multi-centre Study to assess the Efficacy and Safety of ZD6474 (Zactima) in Combination with Pemetrexed (Alimta) versus Pemetrexed alone in Patients with locally advanced or Metastatic (stage IIIB or IV) Non Small Cell Lung Cancer (NSCLC) after failure of first line anti-cancer Therapy.**

Richard DeBoer

**A randomized, three arm multinational phase III study to investigate bevacizumab (q3w or q2w) in combination with either intermittent capecitabine plus oxaliplatin (“XELOX”) (q3w) or fluorouracil/ leucovorin with oxaliplatin (“FOLFOX-4”) versus “FOLFOX-4” regimen alone as adjuvant chemotherapy in colon carcinoma.**

Peter Gibbs

**An Open-Label Randomized Phase III Study of Intermittent Oral Capecitabine in Combination with Intravenous Oxaliplatin (Q3W) (“XELOX”) versus Fluorouracil/Leucovorin as Adjuvant Therapy for Patients who have Undergone Surgery for Colon Carcinoma, AJCC/UICC Stage III (Dukes Stage C).**

Peter Gibbs

**Clinicopathologic Influences on Lymph Node Yields.**

Peter Gibbs

Iain Skinner

*Collaborators: RMH, Box Hill, Northern Adelaide, Flinders and SJOG.*

*Supported by: The Colorectal Surgical Society of Australia and New Zealand*

**Socio-economic status in colorectal cancer: Impact on patient presentation, tumour stage at diagnosis, treatment and outcomes.**

Suzanne Kosmider

*Collaborators: CCSANZ Members*

*Supported by: The Colorectal Surgical Society of Australia and New Zealand*

**What Is The Optimal Treatment Of Patients Presenting With Metastatic Rectal Cancer?**

David Campbell

Jayesh Desai, Suzy Kosmider,

Kathryn Field, Peter Gibbs

*Collaborators: RMH, Biogrid Australia*

*Supported by: The Colorectal Surgical Society of Australia and New Zealand*

**Future Research Objectives**

We aim to:

- Increase clinical trial participation within the Oncology and Haematology patient population of the western suburbs, surrounding districts, and rural areas.
- Encourage and promote investigator driven and non-sponsored trial programs within the unit.
- Ensure the clinical trial program offers a comprehensive range of therapeutic options across the different stages and types of cancers at Western Health.
- Broaden the scope of the clinical research program; areas of need include Haematology, Radiation Oncology, Supportive care and Palliative care projects.
- Improve on and build new collaborative partnerships with other Cancer Service Providers. ie: Radiation Oncology Victoria. Peter MacCallum Radiation Oncology.
- Ensure the ongoing high standard and professional conduct of clinical trials within the unit and the institution and adhering at all times to Good Clinical Research practice and ICH guidelines.

## 2008 Achievements

### 2008 Publications

Bernhard J, Zahrieh D, Zhang JJ, Martinelli G, Bassler R, Hurry C, Forbes JF, Aebi S, Yeo W, Thurlimann B, **Green M**, Colleoni M, Gelber RD, Castiglione-Gertsch M, Price KN, Goldhirsch A and Coates AS, for the International Breast Cancer Study Group (IBCSG) Quality of life and quality-adjusted survival (Q-TWiST) in patients receiving dose-intensive or standard dose chemotherapy for high-risk primary breast cancer *British Journal of Cancer* (2008) 98, 25-33.

Jorissen R, **Lipton L**, Gibbs P, Chapman M, Desai J, Jones I, Yeatman T, East P, Tomlinson I.P.M, Verspaget H.W, Aaltonen L.A, Kruhoffer M, Ørntoft TF, Lindbjerg A.C, Sieber O.M. DNA Copy Number Alterations Underlie Gene Expression Differences Between Microsatellite Stable And Unstable Colorectal Cancers. *Clin Cancer Res*. 2008 Dec 15;14(24):8061-9.

Price T.J, **Lipton L**, McCreivy J, McCoy S, Sun YN, Rosenthal M.A. Safety and Pharmacokinetics of Motesanib in Combination With Gemcitabine for the Treatment of Patients With Solid Tumours. *Br J Cancer*. 2008 Nov 4;99 (9):1387-94.

Ehrich M, Turner J, **Gibbs P**, **Lipton L**, Giovanneti M, Cantor C, Van den Boom D. Cytosine methylation profiling of cancer cell lines. *PNAS* 2008 Mar 25;105(12):4844-9. Epub 2008 Mar 19.

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Kong G, Lichtenstein M, **Gunawardana D**, Better N, Roysri K, Sivaratnam D. Fixed defect on rest/stress Tc-99m sestamibi study underestimates myocardial ischemia: comparison with 24-hour thallium-201 study for short – and intermediate-term follow-up. *Clin Nucl Med Mar 2008* 33 (3): 168-171.

#### Conference and Seminar Presentations:

**Richard De Boer**: Lapatinib Launch meeting, Seoul, Korea March 2008.

**Richard De Boer**: Medical Oncology Group of Australia Conference August 2008 Best of Australia and New Zealand research: The ZO-FAST trial: Zoledronic acid effectively inhibits aromatase inhibitor associated bone loss in postmenopausal women with early breast cancer receiving adjuvant letrozole: 24 month BMD results.

**Richard De Boer**: Global Bone Health Tour – Stockholm, Moscow, Istanbul. Bisphosphonates in the treatment of bone metastases: Clinical use and standards of care.

#### Abstracts

19 th ICAT meeting, Paris, February 2008. Campone M, Limentani SA, Curigliano G, Dorval T, Romieu G, White S, **De Boer R**, Maerevoet M, Lehmann F, Burny W, Cormont F, Louahed J. A recombinant HER2 protein evaluated for Cancer Immunotherapy in Breast Cancer: Clinical response is associated with induction of humoral and cellular mediated immune response.

31st SABCS San Antonio, December 2008.

**De Boer R** and Chan A. Clinical outcomes of patients with T1N0 breast cancers: how important are biological risk factors?

31st SABCS San Antonio, December 2008. (Oral Presentation). Eidtmann H, Bundred N, **De Boer R**, Llombart A, Davidson N, Neven P, von Minckwitz G, Miller J, Schenk N, and Coleman R. The effect of zoledronic acid on aromatase inhibitor associated bone loss in postmenopausal women with early breast cancer receiving adjuvant letrozole: 36 months follow-up of ZO-FAST.

31st SABCS San Antonio December 2008. Chirgwin JH, Lewis J, Woodfield R, Davis SR, Eden J and **De Boer R**. ENHANCE Consultative Group, Melbourne, Australia. Menopause surveillance recommendations for patients with endocrine responsive breast cancer.

ASCRS Annual Meeting Abstracts, Boston, Massachusetts June 2008. Chen F, **Gibbs P**, Hastie I, Hayes I, Hunter A, Jones I, McLaughlin S, Reiger N, Shedda S, Skinner I, Steele M. Impact of the National Bowel Cancer Screening Program Utilizing FOBT on the diagnosis of Colorectal Cancer.

ASCO (The American Society of Clinical Oncology) GI Symposium. **Kosmider S**, **Field K**, Oakman C, Ananda S, Singh M, Moore M, Compston D, Stella D, **Gibbs P**. Pre-operative Workup Of Colon And Rectal Cancer In Australia: Marked Variation In Practice And Evidence For Inclusion Of CT Chest Imaging.

ASCO 2008. **Gibbs P**, Platell C, Reiger N, Skinner I, Jones I, Wattchow D, Chen F, Suthar U, Compston D, **Kosmider S**. Determinants of lymph node yield in colorectal cancer: Analysis of 9867 patients from prospective colorectal cancer databases.

ASCO 2008. **S. Kosmider**, S. Shedda, Faragher I, Jones I, **P. Gibbs**. Prognostic significance of albumin level in patients undergoing elective surgery for colon cancer.

ASCO 2008. **Kosmider S**, Tan H, Yip D, Dowling R, Lichtenstein M, **Gibbs P**. Clinical experience of selective internal radiation therapy in combination with systemic chemotherapy as first-line therapy in patients with unresectable hepatic metastases from colorectal cancer – updated results.

Medical Oncology Group of Australia 2008 Moore M, **Kosmider S**, **Desai J**, Barnett F, Lim L, Compston D, **Gibbs P**. Palliative Chemotherapy For Stage IV Colorectal Cancer – Use And Outcomes In Routine Practice.

COSA Annual Scientific Meeting 2008. **Kosmider S**, Kwong, D, **Field K**, **Desai J**, **Gibbs P**. Electronic Chemotherapy Prescribing – increasing clinical data collection and treatment quality.

COSA Annual Scientific Meeting 2008. **Field K**, **Kosmider S**, Johns J, Farrugia H, Jones IT, McLaughlin S, Chapman M, Harold M, Murigu G, **Gibbs P**. Linking cancer registry and hospital outcomes databases results in increased utility and accuracy of both data sets.

#### Book Chapters

**William Renwick**, Ruth Pettengell and **Michael Green**. Use of Filgrastim and Pegfilgrastim to Support Delivery of Chemotherapy Twenty Year of Clinical Experience. (*In Press*).



# PHARMACY

The Western Hospital pharmacy through its clinical trial department supports 48 active trials in the areas of oncology, gastroenterology, endocrinology, intensive care, cardiology and respiratory medicines. As most of the clinical trial research at Western Health involves medication supply, the pharmacy provides a crucial service to our research community and patients. The clinical trial pharmacist is also involved in facilitating research projects within the pharmacy department. Much of the research this year has had a large collaborative focus with interstate universities.

## Researchers

**Wayne Lee:** Acting Deputy Director of Pharmacy, Sunshine Hospital  
**Lei Ching Yeoh:** Clinical Trial Pharmacist  
**Ivy Tan:** Senior Pharmacist – Education Coordinator  
**Emma Dean-Layton:** Clinical Pharmacist

## Students

**Tze Ching Tat SZETO:** University of Queensland.  
**Minh-Hau Nguyen:** University of Queensland  
**Claudia Chen:** University of Queensland

## Current Research

### **An audit of the Adverse Drug Reaction and Allergy Documentation and Reporting Process at Western Health.**

Emma Dean Layton  
Tze Ching Tat SZETO  
*Collaborators: University of Queensland*

### **pAMH study.**

Ivy Tan  
Wayne Lee

## **Gentamicin Prescribing.**

Wayne Lee  
Lei Ching Yeoh

## **“N/A” (not available) endorsement on drug chart.**

Wayne Lee

## **Warfarin Prescribing Audit.**

Lei Ching Yeoh  
Minh-Hau Nguyen, Claudia Chen  
*Collaborators: University of Queensland*

## **Future Research Objectives**

Western Health Pharmacy department has endeavoured to promote and cultivate a research atmosphere within the department. With the recent expansion of the Clinical Trials Pharmacist role to include overseeing the departments own research, we look forward to facilitating more collaborative projects and encouraging more research in 2009.

# RHEUMATOLOGY

## THE RHEUMATOLOGY TEAM

The Rheumatology Team at Western Health are currently working on projects which involve measuring different outcomes in osteoarthritis including conservative and surgical management. On top of this they are performing other studies which look at pain, function and disability measures in relation to decision for joint replacement surgery.

Dr. Keith Lim, The Head of the Rheumatology Unit at Western, was made senior editor of the International Journal of Rheumatic Diseases in 2008. During 2008 he also appointed a clinical research coordinator, Janis Lim who will set up the biologics clinic and help implement and facilitate the unit's research activities.



The unit is on an active recruitment drive. There was one rheumatologist in 2008, we recruited a second recently, and by the year's end we hope to have another three more. Next year we will involve another rheumatologist at Sunshine and provide a referral service on that campus. We have had an advanced trainee in a general medicine/ rheumatology (non core) for the past four years, and from 2010 this will become a core rheumatology position. We have an active teaching programme year round for students, trainees and GPs. Our key research activity is in clinical outcomes in osteoarthritis.

### Researchers

**Keith Lim:** Head of Rheumatology

**Richard Travers:** Rheumatologist

**Janis Lim:** Research coordinator

**Veronique Sayag-Boukris:**

Senior Fellow

**Eashwary Mageswaren:**

Overseas Fellow

**Jennifer Maciel:** Musculoskeletal Physiotherapist

Registrars

**Madeleine Healy**

**Shom Battacharjee**

### Current Research

#### Measuring the clinical outcomes patients with of hip and knee osteoarthritis.

Keith Lim

Madeleine Healy, Jennifer Maciel, Veronique Sayag Boukris, Eashwary Mageswaren

*Collaborators: St Vincent's Hospital*

#### OMERACT/OARSI world wide collaboration in knee and hip Osteoarthritis.

Keith Lim

Madeleine Healy, Jennifer Maciel, Veronique Sayag Boukris

*Collaborators: M Dougados (Paris, France), S Lohmander (Lund, Sweden), G Hawker (Toronto, Canada) and nine other countries*

### Future Research Objectives

The present projects we are working on in Osteoarthritis have provided opportunities to explore other ideas. We are exploring further collaborations with physiotherapy in particular clinical aspects of quadriceps strengthening in knee Osteoarthritis.

A large X-ray study will commence in Sept/Oct '09 in collaboration with researchers in Bristol, Cambridge, looking at bone response and changes in relation to surgery outcome. We are also planning to pilot a study looking at the placebo and pain responses in

patients with knee osteoarthritis with this research group as well.

With the appointment of key consultant staff we are looking to develop new initiatives in other areas of rheumatology including, musculoskeletal ultrasound, nuclear medicine, and the use of biologics. We are also hoping to commence participation in drug trials, in particular, with biological agents early next year.

### 2008 Achievements

#### Publications

**Mageswaren E,** Clemens L.E, Choong P.F.M., **Lim K.K.T.** Reducing The Burden Of Patients Waiting For Orthopaedic Appointments With Hip And Knee Oa: The Rheumatologist Led St Vincent's Oa Service. *Ann Rheum Dis* 2008;67(Suppl II):95.

**Mageswaren E,** Chow K, Sullivan M, Savage A, Fraser S, Page C, Clemens LE, Choong PFM, **Lim K.** 'The St Vincent's' Hospital OA Service. Better Management Of The Waiting Patient'. *Internal Med Journal*, 2008; 38(2): A1-A36.

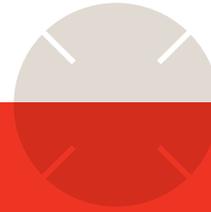
Lam S.K.L, Ngian G.S, **Travers R,** **Lim K.K.T.** 'Amyloidosis: A Rheumatological Perspective On Diagnosis, Further Investigation And Treatment'. *Int Journal Rheum Diseases*.2008; 11(1): 55-60.

Micallef M, **Lim K,** **Travers R.** 'Stopping The Rot: The Stories Behind Methotrexate, Sulphasalazine And Hydroxychloroquine', *International Journal of Rheumatic Diseases*. 2008; 11(1): 61-65.

Thumboo J, Penserga E, **Lim K.** 'Encouraging Epidemiological And Outcomes Research In Asia'. *Int J Rheum Dis*.2008; 12(2).



# SURGERY



Following the appointment of Professor Chan in 2002 to the Department of Surgery one of his main priorities has been to set up a program of research focusing on intestinal cancer here at the Western Hospital. In June 2003, jointly with Western Health, the department appointed a Senior Research Fellow, Dr. Paul Senior to run the research programs.

In 2004 the Ludwig Institute in conjunction with Western Health set up a Tissue Bank branch to bank colon cancer specimens. This has been highly successful with expansion allowing the banking of other tumour types to be undertaken. Since 2004 the Western Health Tissue Bank has collected tissue from around 800 consented patients, which has been distributed to researchers across Victoria. The Western Hospital continues to be one of the main sources of annotated colorectal and metastatic tissue for cancer researchers.

### Researchers

#### **Professor Steven Chan:**

Head of Department, Surgeon

**Associate Professor Trevor Jones:** Surgeon

**Paul Senior:** Senior Research Fellow

**Arun Chandu:** Oral and

Maxillofacial Surgeon

**Matthew Chapman:** Tissue Bank Manager

**Graeme Thompson:** Surgeon

**Felix Behan:** Plastic and

Reconstructive Surgeon

**Steven McLaughlin:** Colorectal Surgeon

**Ian Faragher:** Colorectal Surgeon

**Iain Skinner:** Colorectal Surgeon

**Matthew Croxford:** Colorectal Surgeon

**AMS Student:** Benny Zhang

### Current Research

#### **Results of Gastojejunostomy.**

Steven Chan

Ba Nguyen

#### **Uriswatch – a visual haematuria scale.**

Steven Chan

Jia Min Chum, Lih-Ming Wong

#### **An infusion trial of void before catheter removal.**

Steven Chan

Mark Boccola

#### **Evaluation of Laser Palatoplasty for Snoring.**

Steven Chan

Jason Lee, Stephen Kleid

#### **EphB2/ephrinB interaction as a regulator of colon cancer.**

Paul Senior

*Collaborators: University of Melbourne, RMH*

#### **The role of trafficking proteins in macrophage activation.**

Paul Senior

*Collaborators: University of Melbourne, RMH*

#### **Open cholecystectomy within Western Health – an audit of factors influencing conversion to open operation.**

Graeme Thompson

Fiona Reid

#### **Anastomotic leaks following right hemicolectomy – an audit comparing stapled vs sutured techniques.**

Graeme Thompson

Manny Cao

#### **An audit of the management of bleeding peptic ulcers.**

Steven Chan

Matthew Read, Bob Tran

#### **Clinicopathologic Influences on Lymph Node Yields.**

Peter Gibbs

Iain Skinner

*Collaborators: RMH, Box Hill,*

*Northern Adelaide, Flinders SJOG.*

*Supported by: The Colorectal Surgical*

*Society of Australia and New Zealand*

#### **What Is The Optimal Treatment Of Patients Presenting With Metastatic Rectal Cancer?**

Ian Faragher

*Collaborators: RMH, Biogrid Australia*

*Supported by: The Colorectal Surgical*

*Society of Australia and New Zealand*

#### **Randomized Controlled Trial Comparing Colonic Stenting with conventional Surgery.**

Steven McLaughlin

#### **Randomized Controlled Trial Comparing Conventional Haemorrhoidectomy with Ligasure and Stapled Haemorrhoidectomy.**

Steven McLaughlin

#### **Virtual colonoscopy to follow up failed colonoscopy.**

Steven McLaughlin

#### **MRI use in preoperative assessment of rectal cancer.**

Steven McLaughlin

#### **Video phone communication in colorectal surgery.**

Steven McLaughlin

#### **Preoperative CPX assessment, morbidity and mortality in colorectal surgery.**

Steven McLaughlin



## 2008 Achievements

### Publications

Chiang D.T, **Thompson G.** Management Of Acute Gallstone Pancreatitis: So The Story Continues. *ANZ Journal of Surgery.* 2008; 78(1-2):52-4.

Gibbs P, Handolias D, **McLaughlin S, Chapman M,** Johns J, **Faragher I.** A Single Institution Experience Of Adjuvant 5-Fluorouracil-Based Chemotherapy For Stage III Colon Cancer. *Internal Medicine Journal* 2008;38 (4):265-9.

Huang J.G. Lim W Ward S.M, **McLaughlin S.J.** Education And Imaging. Hepatobiliary And Pancreatic: Splenic Autotransplantation. *Journal of Gastroenterology and Hepatology* 2008; 23 (7 pt 1):1162.

Kosmider S, Jones I.T, Hibbert M, Johns J, **McLaughlin S, Chapman M,** Gibbs P. Establishing A National Colorectal Cancer Database: Lessons Learnt From Bio21-MMIM. *ANZJS.* 78;803-809:2008.

K.Field, S.Kosmider, J.Desai, L.Lim, F.Barnett, **S. McLaughlin,** I.Jones and P. Gibbs. Residual Treatment Disparities After Referral for Rectal Cancer. *J Natl Cancer Inst,* 100, 1739, 3 Dec 2008.

### Future Research Objectives

Surgical treatment of cancer of the colon and other tumours of the gut are a major clinical focus of this Department. Cancers of the colon and rectum are the second most common type of tumour occurring in the Victorian population. Spread of the tumour to other organs, particularly liver, (metastasis) is the major cause of death in this disease. Understanding the mechanisms by which cancer cells are able to spread through the body will ultimately lead to improved treatment and survival. We were initially interested in a number of genes with diverse functions that were all important players in the metastatic process.

Due to success in obtaining grant funding we are currently concentrating on one gene called EphB2. The expression of this gene is switched off in most colon cancers and we have shown reactivating it slows the growth of tumours in vivo and reduces migratory and invasive activity in vivo. We are currently preparing a manuscript for publication of these findings. We are now concentrating on unravelling the biochemical mechanisms underlying these effects.



S.Ward, J.Huang and **S.McLaughlin**. Colonoscopy: Do Surgeons do it Better? *ANZ J Surg*, 78 (suppl) A26, 2008.

**Faragher I.G**, Chaitowitz I.M, Stupart D.A. Long-Term Results Of Palliative Stenting Or Surgery For Incurable Obstructing Colon Cancer. *Colorectal Disease* 2008; 10(7):668-72.

Shedda S, Kosmider S, **Faragher I**, Jones I, Gibbs P. A Critical Review Of The GPS For Colorectal Cancer. *Annals of Surgery* 247;1087-8:2008.

Wong C, Gibbs P, Johns J, Jones I, **Faragher I**, Lynch E, Macrae F, Lipton L. Value Of Database Linkage: Are Patients At Risk Of Familial Colorectal Cancer Being Referred For Genetic Counselling And Testing? *IMJ* 38;328-333:2008.

**Chandu A**, Witherow H, Stewart A. Submental Intubation In Orthognathic Surgery: Initial Experience. *Br J Oral Maxillofac Surg*. 2008 Oct;46(7):561-3. Epub 2008 Jun 27.

**Chandu A**, Manisali M, Hyde N. Mesiodens: An Unusual Cause Of A Facial Sinus. *J Oral Maxillofac Surg*. 2008 Apr;66(4):819-20. No abstract available.

**Chandu A**, Lee N.J, Stewart A. An Unusual Fracture Of The Mandible 20 Months After A Split Sagittal Osteotomy. *Int J Oral Maxillofac Surg*. 2008 May;37(5):491-3. Epub 2008 Feb 11.

**Behan F**. Evolution Of The Fasciocutaneous Island Flap Leading To The Keystone Flap Principle In Lower Limb Reconstruction. *ANZ Journal of Surgery* 2008; 78(3):116-117.

#### Grants

Investigation of EphB2 as an Inhibitor of colon cancer cell invasion and migration.

**Dr P V Senior** and **Professor Steven Chan**, The Cancer & Bowel Trust.

#### Conference and Seminar Presentations

**Behan F**, Sizeland A, Findlay M, Berry S, Cheng Lo, Hall C, Hui A, Seel M, Pham T, Kleid SK, Ramsey K & **Chan S**. Keystone Design Perforator Island Flap (KIF) in Head & Neck Reconstruction of the Parotid Region. 13th British Academic Conference in Otolaryngology, Liverpool, July 2009.

F.Chen, P.Gibbs, I.Hastie, I.Hayes, A.Hunter, I.Jones, **S.McLaughlin**, N.Reiger, S.Shedda, **I.Skinner**, M.Steele. Impact of the National Bowel Cancer Screening Program Utilizing FOBT on the diagnosis of Colorectal Cancer. ASCRS Annual Meeting Abstracts, Boston, Massachusetts June 2008.

#### Book Chapters

**Behan F**. Design Concepts in Reconstructive Surgery: Applications of the Keystone Island Flap Principle (in press).



# SLEEP DISORDERS AND RESPIRATORY MEDICINE



The Department provides for a wide variety of clinical inpatient and outpatient services related to respiratory and sleep disorders medicine. The Respiratory Function Laboratory is accredited by the Thoracic Society of Australia and New Zealand as a category 4, (complex tests) laboratory. The Sleep Disorders Laboratory is accredited by the Australasian Sleep Association to perform complex sleep studies.

The Department has active teaching and research programs. The teaching program includes teaching of undergraduate and postgraduate medical personnel, nursing staff and allied health staff. The Department is affiliated with The University of Melbourne Department of Medicine (Royal Melbourne and the Western Hospitals). In addition students from the Science Faculty of Swinburne University spend a year within the Department's clinical laboratories as part of their training. The current research program includes studies in obstructive sleep disordered breathing and a number of studies addressing the management of insomnia are performed. Research in

Respiratory Medicine includes: normative lung function values in the Vietnamese population, obesity management, tuberculosis epidemiology and staging of lung cancer.

## Researchers

**David Cunnington:** Consultant Physician, Acting Director of Respiratory and Sleep Disorders Medicine Department.

**Sue Casanelia:** Respiratory Outreach Nurse /Research Coordinator

**Lynnette Reid:** Sleep Scientist in Charge

## Trainee Scientists

**Alex Dyson**

**Rachel McConnell**

Respiratory Medicine and Sleep Fellows

**Himanshu Garg**

**Dien Dang**

## Respiratory Medicine Registrars

**James Ward**

**Tracy Leong**

**Chris Daley**

**Professor Harry Teichtahl:** Director of Respiratory and Sleep Disorders Medicine Department (until 2008)

## Current Research

**Naso-pharyngeal Airway as Treatment for Obstructive Sleep Disordered Breathing – Proof of Concept Study.**

David Cunnington

**Cerebrovascular Blood Flow in Obstructive Sleep Apnoea & Changes Following CPAP Therapy.**

David Cunnington

**Normative Data for Spirometry & Carbon Monoxide Gas Transfer Factor (DLCO) in Australians of Vietnamese Ethnicity.**

David Cunnington

**Restora1 – Restore physiological Sleep with the Orexin Receptor Antagonist.**

David Cunnington

**Efficacy and safety of eplivanserin 5mg/day on Sleep Maintenance Insomnia: a 12-week multicentre, randomized, double-blind, placebo-controlled study followed by an open treatment phase extension with eplivanserin for a 40 week period.**

David Cunnington

## 2008 Achievements

### Publications

Donald K.J, McBurney H, **Teichtahl H**, Irving L, Browning C, Rubinfeld A, Wicking J, **Casanelia S**, Telephone based asthma management – Financial and individual benefits. *Australian Family Physician*. 37(4):272-5, Apr 2008.

Donald K.J, McBurney H, **Teichtahl H**, Irving L. A pilot study of telephone based asthma management. *Australian Family Physician*. 37(3):170-3, Mar 2008.

Wang D, **Teichtahl H**, Goodman C, Drummer O, Grunstein RR, Kronborg I. Subjective daytime sleepiness and daytime function in patients on stable methadone maintenance treatment: possible mechanisms. *J Clin Sleep Med*. 2008 Dec 15;4(6):557-62.

Stevenson IH, **Teichtahl H**, **Cunnington D**, Ciavarella S, Gordon I, Kalman JM. Prevalence of sleep disordered breathing in paroxysmal and persistent atrial fibrillation patients with normal left ventricular function. *Eur Heart J* 2008 Jul;29(13):1662-9.

### Awards

**Professor Harry Teichtahl:** ASA Lifetime Achievement Award (also invited to apply for Editor in Chief, *Journal of Sleep and Sleep Disorder Insights*).

medical conditions, such as diabetes. However, some trials (for example, vaccine trials) require the involvement of healthy individuals. Clinical trial volunteers gain the satisfaction of helping to find new treatments, cures and preventions for disease. They may also have access to new treatments before they become widely available.

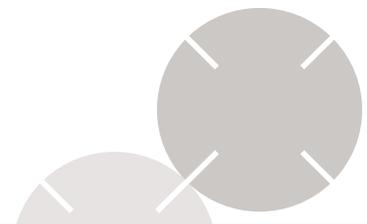
All our research at Western Health is conducted to ethical standards as defined by ICH GCP, the National Statement on Ethical Conduct in Research Involving Humans (issued

by the National Health and Medical Research Council of Australia), and other Victorian regulatory requirements. These standards protect the safety and well being of study participants, their rights, confidentiality of their data and personal information.

Western Health acknowledges the patients and staff who have volunteered to take part in our research over the last 12 months. Without this support much of the research featured in this publication would not have been possible.

In order to obtain the scientific evidence required to improve the quality and effectiveness of the healthcare we deliver, voluntary participation of hundreds of people each year is needed to support our research projects and clinical trials.

Clinical trials are research studies that involve volunteers participating in the testing of new drugs or delivery methods to determine safety and effectiveness. They are the safest and fastest way to find effective health care treatments. Clinical trials primarily require participants with specific



# PARTICIPANTS



Western Health is currently constructing a new Teaching, Training and Research facility at Sunshine Hospital with support from the Commonwealth and Victorian Governments. Working with The University of Melbourne and Victoria University this new facility will provide future health professionals with the very best clinical education and research facilities in the Western Suburbs by 2010.

#### TTR West Fast Facts

- Western Health has partnered with the University of Melbourne and Victoria University to develop a new teaching, training and research facility at Sunshine Hospital (TTR West).
- TTR West will house researchers investigating diseases that particularly affect the population of the West including diabetes, heart disease, cancer and osteoporosis.
- The University of Melbourne will establish a new clinical school at TTR West to provide undergraduate and postgraduate training of doctors in the West. This will assist in addressing a national shortage of doctors, particularly in outer metropolitan regions.
- Victoria University will establish a centre for the education and training of nurses and allied health professionals.
- The building will be an iconic, contemporary state-of-the-art building incorporating a library, lecture theatre, auditorium, research laboratories and clinical research areas.

## TEACHING, TRAINING AND RESEARCH FACILITY (TTR WEST)

