The Unit experienced a very successful year. In the arena of health policy, a major project which aims to examine and forecast activities at the interface of acute and aged care was commenced. A computer simulation of the interactions between acute, community and long term residential care is being constructed, which will enable exploration of a variety of policy options.

In clinical research and development, an emerging focus has been on the application of e-health techniques to geriatric medicine. With support from the Department of Veterans’ Affairs and Queensland Health a variety of experimental models and evaluations are being implemented. The mission is to expand the availability and increase the reliability of assessment procedure in aged care. This involves electronic assessment, sending of images through email, and tele- and video-conferencing with staff and patients in rural settings.

The Queensland Parkinson’s Project which is associated with this unit has continued to progress this year with a National Health and Medical Research Council project grant awarded to study genetic risk factors for Parkinson’s disease and the enrolment of a research registrar in neurology and genetics working in the area of the clinical genetics and family history of neurodegenerative disease.

The Unit is building strategic relationships with both the Australasian Centre on Ageing at St Lucia, and the Centre for Online Health at Herston. Further information can be found on http://www.pa.uq.edu.au/augm.
Current Research Activities

Clinical Trials

Modelling the future: A policy flight simulator at the acute – aged care interface. (L Gray, G McDonnell, T Broe, D Gibson). This project is developing a computer simulation of the interactions between acute, residential and community care to assist in service planning. Simulation models will be developed for application at national and regional levels. Scheduled for completion in 2007. Funded by Australian Health Ministers Advisory Council/National Health and Medical Research Council.

Validation of the interRAI-AC for detection of delirium: Agreement with clinician assessment. (J Endecott, M Khateeb, J Morris, L Gray). This project will develop and test a screening tool for delirium using items within the interRAI Acute Care schedule.

Geriatric outcomes study in hospital (GOSH). (L Gray, J Hirdes, A Wilson, E Beller, I Scott, P Ramritu). A prospective study aiming to identify predictors of adverse outcomes (delirium, falls, functional decline, pressure ulcer, etc) within hospital among older medical patients. Ultimately it is aimed to develop an omnibus screening strategy that will risk profile patients at admission with an aim to better target prevention and treatment strategies.

Reliability and validity of the interRAI Acute Care protocol. (L Gray and the interRAI Collaborative). Professor Gray is coordinating this eight nation study to test the reliability and validity of the revised interRAI Acute Care assessment schedule.

Multi-centre study identifying impacts of an assessment and care planning protocol for frail older patients in acute care. (L Gray, B Nair, E Beller, S Bowler, P Varghese, P Goldstraw). This study is evaluating the impact of a multi-disciplinary geriatric consultation service centred around a standardised assessment protocol. 450 frail medical patients have been admitted to this randomised trial across two hospital sites (Mater Adult Brisbane and Townsville General Hospital). The project will conclude in late 2005.

Application of e-health strategies to support remote geriatric assessment and care planning. (L. Gray, R. Wootton, P. Scuffham, M. Martin-Khan et al). This project involves application of a comprehensive geriatric assessment instrument at the Mater Rockhampton hospital that is then accessed remotely by a geriatrician for assessment and feedback/comments to the treating doctor and hospital staff on the patient condition. This work is supported by the Department of Veterans Affairs.

Other Research (Biomedical)

Recruitment of Parkinson’s disease patients and families. (G. Mellick, A. Sellbach). This is an ongoing project developing a clinical resource for the study of genetic and environmental determinants of Parkinson’s Disease.
Financial Support

Grants
$128,540. Australian Health Minister’s Advisory Council (AHAC). Policy Flight Simulator. (Len Gray)
$30,447. Department of Veterans’ Affairs. E-health strategies for remote geriatric assessment. (Len Gray)
$70,000. Queensland Health. E-Health Strategies for remote geriatric assessment (Len Gray)
$750,750 (over 3 years). NHMRC. The Australian Parkinson’s Project (APP) – Uncovering genetic risk factors for sporadic PD. (George Mellick)
$50,000. Princess Alexandra Hospital- Neurology. “Familial PD – What does it mean to claim a family history?” (George Mellick)
$75,000. Princess Alexandra Hospital – Neurology. “Gene-Environment interactions in the aetiology of PD.” (George Mellick)
$40,000. Sanofi Synthelabo. Study of the efficacy of Xaliproden in patients with mild to moderate dementia of the Alzheimer’s type. (Paul Varghese)

Other Support
$140,000. Private donor. (George Mellick)
$60,000. Private donor. (George Mellick)

Familial Parkinson’s – What does it mean to claim a family history? (G. Mellick, A. Sellbach). By studying the familial aggregation of neurodegenerative disease in Queensland, this study hopes to yield useful information about the contribution genetic variables play in the cause of Parkinson’s Disease.

Psychiatric and non-motor symptoms of Parkinson’s Disease – What are the risk factors? (G. Mellick). A large proportion of people with Parkinson’s disease suffer from non-motor symptoms such as anxiety and depression. This project is investigating the factors that associate with these presentations in the larger Parkinson’s Disease group.

Depression in Parkinson’s Disease – Defining the phenotype. (G. Mellick). There is limited information about the similarities and differences in the type of depression suffered by people with Parkinson’s Disease compared to the general population. As there are a number of overlapping symptoms of Parkinson’s Disease and depression, this project is aiming to understand better the specific features of Parkinson’s Disease depression and develop tools to better recognize and assess this.

Gene x environment interactions and the cause of Parkinson’s Disease. (G. Mellick). Most cases of Parkinson’s Disease are thought to involve complex interactions between genetic and environmental factors. Unraveling these contributions to Parkinson’s Disease risk is the focus of this project.

Publications

Journal Articles

Published Abstracts

Lessons from epidemiological studies of Parkinson's disease. Teaching Course, XIII World Congress of Neurology, Sydney, NSW.


Dr Paul N Varghese
Falls and Medication Management. Australian Association of Consultant Pharmacists National Meeting. Gold Coast, Queensland


Integrating the interRAI AC and PAC into the Sub-Acute episode. Australian Association of Gerontology 38th National Conference. Gold Coast, Queensland

Post Graduate Students

Prabha Ramritu, PhD, in progress
Melinda Martin – Khan, PhD, commenced 2005
Daniel Buchanan, PhD, in progress
Nadeeka Dissanayaka, PhD, in progress
Coral Gartner, PhD, in progress
Yifu Deng, PhD, completed
Shaun McCrystal, BSc Honours, completed
Anna Sellbach, MPhil, commenced

Awards

2005 University of Queensland Award for the Enhancement of Student Learning (RSVP-Research Student Virtual Portfolio) G.Mellick (with Catherine Manathunga and Paul Lant)

Public Service Relevant to Research

Professor Len Gray
Member, Ministerial Implementation Taskforce (2004- ). This group is overseeing the implementation of the most recent national aged care reforms, on behalf of the Minister for Ageing, Julie Bishop.

Associate Editor, Australasian Journal on Ageing (2003- )

Fellow, InterRAI Collaborative (2001- ). InterRAI is an international working group of aged ‘care researchers that develops assessment protocols, data sets and quality tools for aged care and related fields.

Dr George Mellick
President, Parkinson's Queensland Incorporated. Parkinson's Queensland Incorporated is the state-based support organisation for people with Parkinson's Disease.

Board Member of Parkinson's Australia.

Princess Alexandra Hospital is the federated Nation-wide support and advocacy agency for people with Parkinson's Disease.

Panel Member – Better Practice Awards, The Aged Care Standards and Accreditation Agency Ltd

Dr Paul Varghese
Member of the Clinical Reference Group advising the Australian Health Ministers Advisory Council – Care of Older Australians Working Group (COA takeaway) (2001-)

Member Stroke Care Pathway Expert Advisory Committee charged with the development of a Stroke Care Pathway (2004-)

Member of Transition Care Task Group advising the Care of Older Australians Working Group (COA旺) on the Transition Care program (2004-)

State Organising Committee: Annual Scientific Meeting of the Australian Society for Geriatric Medicine (2005-)

Lectures and Presentations

Professor Len Gray

The Acute Aged Care Interface: The 4th Anzac Research Institute Symposium. Sydney, NSW.

Dr George Mellick
CYP450, genetics and Parkinson’s disease: gene x environment interactions hold the key. 16th International Congress on Parkinson’s Disease and Related Disorders, Berlin, Germany.

Articles Accepted for Publication


The Acquired Brain Injury Outreach Service is a specialist community based rehabilitation service for people with acquired brain injury, for carers and for workers assisting people with acquired brain injury. The primary aim of the service is to facilitate successful community integration for people with acquired brain injury. It also provides training and consultancy to service providers and carers and conducts research and development activities to improve outcomes for people with acquired brain injury and their families.

Acquired Brain Injury Outreach Service research highlights during the year have centred around development and evaluation including:

- The commencement of the self management support networks project, funded through the Pathways Home initiative
- New collaboration with the Mater Hospital Rehabilitation of Brain Injury and Neurological Disorders team to develop and evaluate a model for transition care/outreach for people with brain injury moving from paediatric to adult community-based services
- Development and coordination of the inaugural Moving Ahead: Dual Diagnosis Acquired Brain Injury / Mental Health workshop in Townsville.

### Current Research Activities

#### Other Research

Self management support networks for people with stroke and brain injury after hospital discharge: Development and evaluation.

Measuring participation and resource availability and utilisation in community-based Acquired Brain Injury rehabilitation.

A research intervention to enhance the well-being and psychosocial outcomes of patients based on the World Health Organisation International Classification of Functioning, Disability and Health- environment framework.

Evaluation of a clinical alliance between the Acquired Brain Injury Outreach Service and the Kirwan Acquired Brain Injury Service as a means of improving urban and regional collaboration and providing reciprocal staff support in managing and understanding dual diagnosis brain injury and mental illness.

Developing and implementing a model of transition care for young people moving from paediatric to adult community-based brain injury services.

Predicting care needs in the community for people with brain injury using outcome indicators collected at discharge from inpatient rehabilitation.
Financial Support

Publications

Journal Articles

Book Chapters

Lectures and Presentations


Post Graduate Students
Melissa Kendall, Doctor of Philosophy (rehabilitation psychology), in progress

Awards
Elissa Morriss
Clinical Neuropsychologist, received the Bob & June Prickett Winston Churchill Memorial Trust Fellowship to investigate ways to support adults with brain injury and their family/carers to manage their challenging behaviour.

Public Service Relevant to Research
Melissa Kendall
Member, Princess Alexandra Hospital Allied Health Research Committee
Reviewer, Disability and Rehabilitation
Joined National Ethics Approval Form Review Panel
The role of this clinical service is to assist and improve the identification, assessment and treatment of alcohol, tobacco and other drug problems encountered both within the Princess Alexandra Hospital and referred by community health practitioners. The Unit has developed, applied and evaluated cognitive and behavioural therapy approaches to substance use disorders. The Unit has extended their experience in the use of relapse prevention medications in the treatment of alcohol dependence. Their short term outcomes with combined medication (naltrexone + acamprosate) are similar to internationally reported results. Clinical evaluation includes measures of expectancy, craving and psychological function. Involvement in the Queensland Illicit Drug Diversion Initiative has extended the clinical range assessed.

**Current Research Activities**

The impact of cognitive behavioural therapy on health perception and psychosocial function.

Treatment effects on alcohol and cannabis related expectancies.

Applications of machine learning techniques to clinical decision making in the treatment of alcohol dependence.

Psychometric and psychosocial outcome among liver transplant recipients in whom alcohol was a contributing factor to their liver disease.

The development of valid and reliable measures of craving.
Financial Support
The Alcohol and Drug Assessment Unit has treatment funding only
National Drug Strategy Funding
Queensland Illicit Drug Diversion Initiative.

Publications

Journal Articles

Feeney GF, Connor JP. (2005). Review: acamprosate and naltrexone are safe and effective but have low compliance rates for people with alcohol dependence. Evidence Based Mental Health.8 (1):14


Book Chapters

Articles Accepted for Publication


Post Graduate Students
Mare Grier, Masters Psy Clin, (in progress)
Martyn Symonds, PhD, commenced 2005
Research has continued to focus on the diagnosis and management of acoustic neuromas. In conjunction with the Ear Nose and Throat Department a major aim has been to determine the optimal timing of surgical intervention in terms of quality of life outcomes. This research has received support through a PhD scholarship awarded to the Princess Alexandra Hospital Cancer Collaborative Group as part of the Queensland Cancer Fund Collaborative Program Grant.

An important development this year has been the promotion of community education through an integrated clinician-patient conference on acoustic neuroma held in July 2005. This conference brought together clinicians, surgeons, and patients from Australia and New Zealand. Over 300 delegates attended this event which showcased current best practice for treatment and management. Presentations from patients themselves brought a fresh perspective to many issues.

External collaborations have continued. The project with the University of Queensland investigating rehabilitative aspects of balance dysfunction following tumour resection has continued to a third study. A new multi-centre study with the Lion’s Hearing Institute has commenced evaluating bone-anchored hearing aids in addressing single-sided deafness resulting from surgery. This study is being sponsored by the Queensland Acoustic Neuroma Association.

Financial Support

Lectures and Presentations
David Brown-Rothwell
Audiological, Radiological, Histopathological, and Surgical Outcomes for Patients with Acoustic Neuroma. Post Graduate Student Conference, School of Health and Rehabilitation Sciences, The University of Queensland.


Public Service Relevant to Research
Evelyn Towers
Member of the Steering Committee State Services for Deaf and Hearing Impaired People

Jillian Sellers
Queensland Vice-President, Audiological Society of Australia

David Brown-Rothwell
Member, Allied Health Research Committee

Member, Princess Alexandra Hospital Research Committee

Patron, Queensland Acoustic Neuroma Association

Post Graduate Students
David Brown-Rothwell, PhD, in progress

Staff
Evelyn Towers,
Director of Audiology
David Brown-Rothwell,
Senior Audiologist and PhD student
Tracey Ross,
Audiologist
Jillian Sellars,
Audiologist
April Baker,
Audiologist
Visiting Audiologist
Dr Wayne Wilson,
Visiting Lecturer in Audiology

Mr David Brown-Rothwell
Senior Audiologist
The Breast and Endocrine Surgical Unit at Princess Alexandra Hospital provides comprehensive world-class management of breast and endocrine surgical conditions within a multi-disciplinary setting. Over 130 newly diagnosed breast cancers are treated within the unit each year. Breast cancer is managed in conjunction with the Medical Oncology and Radiation Oncology Units. Surgeons meet on a weekly basis with clinicians from the other disciplines in a combined breast oncology multi-disciplinary clinic to ensure that “state of the art” breast cancer treatment is provided in keeping with nationally accepted best practice guidelines.

The respective surgeons also work closely with the Breast Screen Queensland Brisbane South Service so that surgical expertise is provided for screening, assessment and diagnosis of early stage breast cancer to facilitate and integrate with definitive management. The Unit is also involved in collection of data for the Royal Australian College of Surgeons National Breast Cancer Audit of all breast cancers treated at the Princess Alexandra Hospital.

Endocrine disorders are also managed where appropriate in conjunction with the Department of Diabetes and Endocrinology and a weekly combined clinic is held to review difficult cases. The unit plays a role in both undergraduate and post-graduate teaching of breast and endocrine surgical conditions.

Current Research Activities

Funded Clinical Trials

RACS SNAC Trial: A multi-centre randomised controlled trial of Sentinel Node Biopsy versus Axillary Clearance. Approximately 25% of national total recruited in Queensland and about half of these by the Princess Alexandra Hospital Surgeons.

Unfunded Clinical Trials

Role of Harmonic Scalpel in Thyroidectomy: an on-going clinical audit

Ultrasound Guided Excision of Impalpable Breast Lesions: an on-going clinical audit

Staff

Associate Professor Ian Bennett, Chairman
Dr Neil Wetzig
Dr David Wilkinson
Dr Petar Vujovic
RN Amanda Smith: Breast Care Nurse

Visiting Medical Officers

Associate Professor Ian Bennett
Dr Neil Wetzig
Dr David Wilkinson
Dr Petar Vujovic
Financial Support
$25,000, Breast Cancer Association of Queensland, RACS SNAC Trial (Qld Component), (Dr Neil Wetzig)

Publications
Journal Articles

Articles accepted for publication

Published Abstracts
Dr Ian Bennett

Presentations/Lectures
Dr Ian Bennett


Dr David Wilkinson
Programme Organiser for Clinical Oncology Society of Australia (COSA) Meeting, November 2005, Brisbane. Chaired Breast Section of Programme.

Public Service Relevant to Research
Dr Ian Bennett
Chairman, Breast and Endocrine Surgical Unit, Princess Alexandra Hospital - current
Chairman, BreastScreen Queensland Surgery Q Group 1994 – current
BreastScreen Queensland Quality Management Committee, October 1997 - current
BreastScreen Queensland Training Committee Representative 1993 - current
Clinical Director, Breast Cancer Family Clinic, BreastScreen Queensland, North Brisbane Service, Chermside

Dr Neil Wetzig
Chairman, Royal Australian College of Surgeons Section of Endocrine Surgery
Royal Australian College of Surgeons Representative, Quality Management Committee BreastScreen Queensland
Co-Chairman, RACS SNAC Trial Management Committee
Chairman, Queensland Co-operative Oncology Group Breast Group
Executive Member, Queensland Co-operative Oncology Group
Editorial Board World Journal of Surgery
Member Ministerial Advisory Council on Cancer Control Queensland Health
The Cardiology Department is a tertiary referral unit offering a comprehensive cardiac service including electrophysiology, invasive intervention and echocardiography. Consequently, the Cardiology Department consists of a Coronary Care Unit incorporating a Procedure Ward, Cardiology Step-Down Ward, 3 Cardiac Catheter Laboratories, ECG Department, Echocardiography Department and Research Department. Supporting the medical officers are adjunctive registered nurses working in Cardiology Rehabilitation, Cardiac Resuscitation and Cardiac Research, as well as Cardiac Scientists involved in echocardiography, pacemakers, ECG, holter recordings, exercise and pharmacological stress testing. In 2005 a Clinical Nurse Consultant Heart Failure was appointed to monitor and follow-up heart failure admissions, heart failure education and develop a heart failure rehabilitation programme.

The broad expertise the Cardiology Department offers has secured a large number of clinical trials from a variety of pharmaceutical companies, the National Health and Medical Research Council, the National Institute of Health and investigator-driven research over the past 15 years. Collaboration with the Cardiac Surgery Department and the University of Queensland’s Cardiovascular Imaging Research Group has ensured that a broad range of cardiology modalities can be offered to prospective research organisations to ensure their clinical trials are implemented in their entirety as well as being able to participate in substudies utilising specific diagnostic tools. Research areas cover coronary artery disease, myocardial infarction, acute coronary syndrome, cardiac arrhythmias and devices, acute/chronic systolic/diastolic heart failure, coronary angiography and percutaneous transluminal coronary angioplasty, cardiac echocardiography, cardiac magnetic resonance imaging and cardiac surgery.
Current Research Activities

Clinical Trials

Acacia Registry – Registry of Acute Coronary Syndrome patients (Dr Paul Garrahy, PI) sponsored by Sanofi-Aventis

Active Trial – Atrial fibrillation (Dr Paul Garrahy, Principal Investigator) sponsored by Sanofi-Aventis and Bristol Meyers Squibb

Adduce Trial – Diabetes mellitus with heart failure (Professor Tom Marwick, Principal Investigator) sponsored by Protemix

Apex Trial – Acute primary Percutaneous Tranluminal Coronary Angiograph (Dr Paul Garrahy, Principal Investigator) sponsored by Procter and Gamble Alexicon

Beautiful Study – Stable coronary artery disease and left ventricular systolic dysfunction (Professor Tom Marwick, Principal Investigator) sponsored by Servier

Early Acute Coronary Syndrome – Early GPIIb/IIIa inhibition in patients with Acute Coronary Syndrome (Dr Paul Garrahy, Principal Investigator) sponsored by Schering-Plough

HAT Study – Anterior/lateral myocardial infarctions randomised to cardiopulmonary resuscitation or home automatic defibrillators. (Professor Tom Marwick, Principal Investigator) sponsored by National Institute of Health

I-Preserve Trial – Heart Failure with diastolic dysfunction (Professor Tom Marwick, Principal Investigator) sponsored by Bristol Meyers Squibb

MAIA Study – Atrial fibrillation (Dr John Hill, Principal Investigator) sponsored by Sanofi-Aventis

OAT – Myocardial infarction with occluded coronary artery > 3 days old (Dr Paul Garrahy, PI) sponsored by National Institute of Health

OnTarget Trial – Vascular dysfunction (Prof Tom Marwick, Principal Investigator) sponsored by Boehringer-Ingelheim

Transcend Trial – Vascular dysfunction with intolerance to ACEi (Professor Tom Marwick, Principal Investigator) sponsored by Boehringer-Ingelheim

Other Research

Monash University: Burden of Care: The Support Needs of Carers of Cardiac Surgery Patients (Rosemary Robinson RN, Principal Investigator)

Central Queensland University: Comparison of Complications in Percutaneous Transluminal Intervention Patients Mobilised at 6, 4 and 3 Hours Following Femoral Arterial Sheath Removal (Walker S, Jen C, McCosker F, Cleary S, Investigators)
Publications

Journal Articles

Published Abstracts
Muelet J, Pavia S, Doneva S, Hill JN, Impact of Right Ventricular Pacing Site on Development of Atrial Tachyarrhythmias in Patients with Dual Chamber Pacemakers, PACE 2005
See also Professor T Marwick, Cardiology Imaging Research Group

Lectures and Presentations
Dr Richard Lim
Controversies in Percutaneous Coronary Intervention Decision-Making, China Interventional Therapeutics, Beijing 2005
Practical Management of Adult Congenital Heart Disease, QLD Rural Physicians Symposium, 2005

Dr Sudhir Wahi
Invited international faculty and keynote speaker at the 11th Asia Pacific Congress of Doppler Echocardiography, New Delhi, India 2005

Ms Cindy Hall
Strategies for Reducing Queries: A Site’s Perspective, Association of Regulatory and Clinical Scientists National Conference, 2005
Strategies for Reducing Queries: A Site’s Perspective, Australian Health and Research Data Managers Association National Conference, 2005

Public Service Relevant to Research

Dr John Hill
Literature Review Panel, North American Society for Pacing and Electrophysiology
Literature Review Panel, Journal of Cardiac Electrophysiology

Dr Sudhir Wahi
Member of the Scientific Committee for the 52nd Annual Scientific Meeting of the Cardiac Society of Australia & New Zealand, held in Brisbane in August 2004

Dr Richard Lim
Member of Princess Alexandra Hospital Research Ethics Committee
Reviewer, Annual Scientific Mtg, Cardiac Society of Australia & New Zealand
Reviewer, European Journal of Clinical Investigation

Ms Cindy Hall
Executive Member, Cardiac Nurses Working Group, The Cardiac Society of Australia and New Zealand
Invited to review the National Ethics Application Form, National Health and Medical Research Council
Study Coordinator Advisory Board Member, Association of Regulatory and Clinical Scientists.
Member, QHealth Annual Scientific Steering Committee
See also Professor T Marwick, Cardiology Imaging Research Group
Robinson, Rosemary and Warnick, Margaret, Invitation to post the Children’s Booklet Series onto the Australian Cardiac Rehabilitation Association website, www.acra.net.au
Current Research Activities

Clinical Trials

The Department of Cardiothoracic Surgery is collaborating with the Department of Cardiology and the Department of Intensive Care in a number of trials including:

“Latent left ventricular dysfunction in patients with asymptomatic mitral regurgitation” with Dr S Wahi. A similar study involving patients with aortic valve disease is expected to start recruiting patients in March 06

“Assessment of the effect of oral fish oil supplements on postoperative atrial fibrillation and heart rate variability” with Dr K Kostner & Prof D Colquhoun

“Use of Echocardiography of Left Ventricular Preload during Anaesthesia and Ventilation” with Dr D Sturgess

Other Research

A long term follow up study of patients operated on for endocarditis is in preparation and a prospective register of these patients is being planned.

Publications

Journal Articles


Public Service Relevant to Research

Dr Paul Peters
Reviewer for the journal Clinical & Experimental Physiology & Pharmacology.

Dr Julie Mundy
Reviewer for the journal Heart, Lung and Circulation
This group provides clinical and research capability in cardiac imaging and image processing, including multi-modality interests that are unique in the Asia-Pacific region. The Group has expertise in new echocardiographic imaging technologies, myocardial viability, early detection of atherosclerosis, assessment of contractile reserve, and studies of how cardiac imaging techniques can influence patient outcomes and cost-effectiveness of care. This work is carried out in the research echo/stress area in the Cardiology Department and image processing area in the University of Queensland, Department of Medicine.

Resources include data acquisition with 4 research echo/vascular ultrasound machines (including two 3-dimensional echo systems), equipment for exercise and pharmacologic stress testing and VO2 analysis. Some of these devices carry developmental software that we are developing in tandem with industry partners. The Group have fifteen networked imaging workstations, including software for measurement of myocardial velocity, strain and backscatter, contrast echocardiography, 3D analysis and automated measurement of vascular structure and function. Data from hospital nuclear and Magnetic Resonance Imaging equipment can be imported using optical disk and additional software is available for each modality.

There are postgraduate students and staff from Australia and overseas. The group offers research opportunities for Cardiology trainees (M.Phil or Ph.D), medical students (joint MB/PhD) and science graduates (Ph.D). Students are enrolled in the Department of Medicine and must meet appropriate admission criteria. Enquiries regarding activities should be directed to Professor Tom Marwick (tmarwick@soms.uq.edu.au).
Current Research Activities

Main Areas of Research

Evaluation of myocardial structure using ultrasound backscatter and tissue Doppler. Changes in the nature of the returning sound waves may be a marker of the underlying tissue characteristics. This work has been used to identify structural changes supporting the presence of a cardiomyopathy of diabetes and obesity, pre-clinical changes consistent with fibrosis in hypertensive patients, and evidence of ischemia (see below). This has generated unique diagnostic approaches and further developments seek to use these techniques to access the response of myocardium to various metabolic interventions including improved diabetic control.

Quantification of echo techniques for detection of myocardial ischemia, using tissue Doppler and speckle tracking techniques to measure myocardial strain and velocity.

Use of high frequency ultrasound to follow the progression of abnormal vascular structure and function. The unique aspect of this work is the use of developmental edge-tracking software for objective quantification of vessel dimensions. These studies focus on patients with diabetes and renal disease as well as patients with heart failure. Two large-scale interventional studies that examine factors influencing vascular function and thereby progression of atherosclerosis have been recently completed. This work interfaces with Dr Kostner’s expertise in lipid management, especially novel plasma markers of atherosclerosis (lipoprotein (a), markers of complement activation and various apolipoproteins).

Evaluation of myocardial perfusion using contrast echocardiography. This work is unique in Australia and promises to offer a new tool to improve the detection of myocardial ischemia, as well as coronary patency and myocardial viability after heart attacks.

Assessment of myocardial viability.

Use of echocardiography to improve clinical decision-making (mitral regurgitation, peripheral vascular disease).

New techniques of image display and recording to improve the efficiency of echocardiography and develop tele-echocardiography in Australia.

Clinical Trials

Clinical Centres of Research Excellence in Cardiovascular and Metabolic Disease – studies of cardiovascular effects of lifestyle and specific therapies for diabetes, hypertension, renal failure and obesity

STRATIFY study – A study of strategies to identify and manage cardiac risk at noncardiac surgery

Use of perhexilene to improve cardiac function in viable myocardium

Importance of transmural distribution of scar to the diagnosis of myocardial viability

New techniques for quantitation of regional left ventricular function

Hypertensive response to exercise – a study of echocardiographic and biochemical responses to anti-fibrotic therapy in left ventricular hypertrophy

Boehringer-Ingelheim – ONTARGET study and magnetic resonance imaging substudy co-investigator (2002-)

NIH – HAT (home automatic defibrillator) study.
Patents

“Apparatus and method for early detection of Cardiovascular Disease using Vascular Imaging” Provisional patent 2003904100. Submitting for national registration in USA, EU and Japan.

Financial Support

Current NHMRC Grants

$400,000. National Health and Medical Research Council of Australia. Clinical Centre in Research Excellence. (T H Marwick)

$160,000. National Health and Medical Research Council of Australia. STRATIFY study (peri-operative risk). (T H Marwick)

$60,000. National Heart Foundation of Australia. Impact of perhexiline in viable myocardium. (T H Marwick)

$120,000. National Health and Medical Research Council of Australia. Efficacy and mechanisms of exercise training in diastolic heart failure. (T H Marwick)

$50,000. National Heart Foundation of Australia. Echo subgroup of the IDEAL trial. (T H Marwick)

$80,000. National Health and Medical Research Foundation of Australia. Development of quantitative tools for assessment of regional cardiac function by echocardiography. (T H Marwick)

$80,000. National Health and Medical Research Foundation of Australia. Importance of transmural distribution of viable myocardium to outcome after revascularization. (T H Marwick)

Other Support

$6,000. Astra Zeneca. University Study. (T H Marwick)

$10,000. Bristol-Myers Squibb. I-PRESERVE study. (T H Marwick)

$33,000. Bodehinger-Ingelheim. ONTARGET study and MRI substudy. (T H Marwick)

$45,000. NIH. HAT study. (T H Marwick)

$49,000. Acusphere. (T H Marwick)


$60,000. Pfizer. Illuminate Study. (KM Kostner)

$27,000. Pfizer. Gemini study. (KM Kostner)

$30,000. Pfizer. FH – Torcetrapib. (KM Kostner)

Publications

Journal Articles


Articles Accepted for Publication


Khoury V, Marwick TH. Stress echocardiography. IN Bergmann SR; Cardiac Imaging - The Clinical Guide. Humana Press, 2006 (in press)


Journal Articles (Editorials/Reviews)


Marwick TH. Diabetic heart disease. Heart 2005 (in press, accepted 14/8/05) [3.2]


Mottram PM, Marwick TH. Assessment of diastolic function: What the general cardiologist needs to know. Heart 2005;91:581-95. [3.2]


Published Abstracts


Chan J, Leano R, Marwick TH. Can assessments of subepicardial function with myocardial strain rate imaging and integrated backscatter distinguish transmural extent of infarction? JACC 2005, 45(3):256A.


Chan J, Strudwick M, Du L, Marwick TH. Local geometric changes in left ventricular remodeling post-infarction can lead to apparent reduction in scar thickness. Heart Lung & Circulation 2005, 14(1):S27.


Jenkins C, Hanekom L, Chan J, Marwick TH. Serial follow-up of left ventricular parameters using real-time 3D echo is comparable to magnetic resonance imaging and superior to 2D echo. JACC 2005, 45(3):264A.


**Book Chapters**


Marwick TH. Stress echocardiography. IN Nihoyiannopoulos, Kisslo, Clinical
Lectures and Presentations

“Prognostic value of stress echo” (Plenary session); “Stress echo and prediction of outcomes” (Moderator). American College of Cardiology 54th Annual Scientific Session, Orlando; March, 2005.
“Functional testing for coronary disease”; “Diabetic heart disease”, University of California; Irvine, March 2005
“3D echo: Pictures or numbers?” (Fireside session). Japan Circulation Society, Yokohama, Japan; March, 2005.
“Coronary artery distribution and stress echocardiography” . Queensland DMU preparation course (Faculty) Wesley Hospital, Brisbane; May 2005
ASEANZ CV and Lipid Forum (Chair, Organizing committee), Melbourne, June 2005.
“Diastolic heart failure” (Plenary), Australian Society for Geriatric Medicine, June 2005, Brisbane.
Live 3D University – A live demonstration course (Organizer), Osaka, Japan, July 2005.
“Update on diastolic function measurement and interpretation in adults”; “Echo markers of LV function – systolic and diastolic – how might we use them?” (Plenary sessions). Cardiac Society of Australia and New Zealand, Perth, August 2005
“Incorporation of 3D quantitative echo of LV volumes and mass into standard transthoracic echo”; “Echo in the ER” (Plenary session); Session moderator. 26th Congress of the European Society of Cardiology, Stockholm. September 2006.
“Post-MI heart failure – A new treatment strategy” (Plenary session), Pfizer Cardiovascular forum, Sydney, September 2005
“Basic and advanced quantitative LV and LA assessment”; “Debate – Should patients with asymptomatic severe MR always proceed to early MV surgery - Con”; “Stress echo – Current status of quantitative techniques”; “Myocardial contrast – LVO, perfusion and more” (Plenary sessions); Echo Australia, Sydney, October 2005
“Patient selection for CRT – Echocardiography” (Plenary session); Management of the failing heart symposium, Sydney, October 2005
“How to perform contrast and stress echo” (How to session), “Emerging echo technologies” and “Diastolic dysfunction” (Moderator). AHA Scientific Sessions, Dallas; November 2005
“Cardiac resynchronization – Hope or Hype”; “Stress echo traps and tricks”; “Incorporation of new technologies into stress echo” (Plenary session), Live demonstrations. 5th Echo Hong Kong, HK, November 2005.

Post Graduate Students

Philip Mottram, PhD, completed
Charles Nelson, MPhil, completed
Neil Smart, PhD, completed
Graham Stephenson, PhD (co-super) (pending)
Lizelle Hanekom, PhD, in progress
Stuart Moir, PhD, in progress
Chiew Wong, PhD, in progress
Jonathan Chan, PhD, in progress
Dhrubo Rakhit, PhD, in progress
David Sturgess, PhD (co-super), in progress
Carolyn Van Eps, PhD (co-super), in progress
Brian Haluska, PhD, in progress

Awards

Dr Lizelle Hanekom  
National Health and Medical Research Council Scholarship - 2004-2006
Dr Stuart Moir  
National Health and Medical Research Council Scholarship - 2005-2006
Dr Chiew Wong  
National Health and Medical Research Council Scholarship - 2005-2006
Dr Jonathan Chan  
National Health and Medical Research Council Scholarship - 2005-2007

Public Service Relevant to Research

Professor Tom Marwick
Grant/promotions Reviewer  
National Health and Medical Research Council
Grant Reviewer  
Chair, National Heart Foundation Research Committee

Committees

Chair, Scientific Committee, Cardiac Society of ANZ meeting, 2004
Echo guidelines committee, Cardiac Society of Aust NZ
Cardiovascular Health Advisory group, National Heart Foundation
Medicare Services Advisory Committee, Department of Health and Aged Care
Cardiac Imaging group, Department of Health and Aged Care
Health Sciences Faculty Research Committee

Editorial Reviewer

Annals of Internal Medicine
American Journal of Cardiology
American Journal of Medicine
American Heart Journal, Editorial Board
Heart, Editorial Board
Circulation
European Heart Journal
European Journal of Echocardiography, Editorial Board
Journal of the American College of Cardiology
Journal of the American Medical Association
Journal of the American Society of Echocardiography, Editorial Board
Internal Medicine Journal
Korean Journal of Cardiovascular Disease
Annals of Internal Medicine
Annual Scientific Sessions Reviewer
American College of Cardiology
American Heart Association
American Society of Echocardiography
American Heart Association
Cardiac Society of Australia & New Zealand
European Society of Cardiology

Postgraduate Students

Philip Mottram, PhD, completed
Charles Nelson, MPhil, completed
Neil Smart, PhD, completed
Graham Stephenson, PhD (co-super) (pending)
Lizelle Hanekom, PhD, in progress
Stuart Moir, PhD, in progress
Chiew Wong, PhD, in progress
Jonathan Chan, PhD, in progress
Dhrubo Rakhit, PhD, in progress
David Sturgess, PhD (co-super), in progress
Carolyn Van Eps, PhD (co-super), in progress
Brian Haluska, PhD, in progress

Awards

Dr Lizelle Hanekom
National Health and Medical Research Council Scholarship - 2004-2006
Dr Stuart Moir
National Health and Medical Research Council Scholarship - 2005-2006
Dr Chiew Wong
National Health and Medical Research Council Scholarship - 2005-2006
Dr Jonathan Chan
National Health and Medical Research Council Scholarship - 2005-2007

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Cardiac Imaging group, Department of Health and Aged Care
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Editorial Reviewer

Annals of Internal Medicine
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Heart, Editorial Board
Circulation
European Heart Journal
European Journal of Echocardiography, Editorial Board
Journal of the American College of Cardiology
Journal of the American Medical Association
Journal of the American Society of Echocardiography, Editorial Board
Internal Medicine Journal
Korean Journal of Cardiovascular Disease
Annals of Internal Medicine
Annual Scientific Sessions Reviewer
American College of Cardiology
American Heart Association
American Society of Echocardiography
American Heart Association
Cardiac Society of Australia & New Zealand
European Society of Cardiology
Associate Professor Karam Kostner

Grant/promotions Reviewer
National Health and Medical Research Council grant reviewer

Committees
Chair, Scientific Committee, German Clinical Lipidology Society 2003
Scientific Organizing Committee, German Clinical Lipidology Society 2004
Scientific Organizing Committee, World Congress Clinical Nutrition, Brisbane, 2004
Austrian Society Cardiology, founding and nucleus member of section: Atherosclerosis Thrombosis and Vascular Biology

Editorial reviewer
Eur J Clin Investigation Editorial Board
Atherosclerosis
Atherosclerosis Thrombosis Vascular Biology
European Heart Journal
Journal of Lipid Research
Clin Chim Acta
Heart
Lipids
Journal of Lipid Research
Austrian Journal of Cardiology Editorial Board
Annual Scientific session's reviewer
European Society of Cardiology
German Society Clin Lipidology
World Congress Clinical Nutrition
The Centre has had a successful year. Professor Ian Frazer, who leads the University of Queensland’s Centre for Immunology and Cancer Research, announced that third phase clinical trials for the world’s first cervical cancer vaccine demonstrated 100% efficacy. The vaccine has the potential to eradicate cervical cancer within a generation and is expected to be on the market mid-2006. For this outstanding achievement and his dedication to science, Ian has been nominated for the prestigious Australian of the Year Award, 2006 and has been awarded the CSIRO Eureka Prize for Leadership in Science 2005.

Professor Ian Frazer will start clinical trials for a treatment for genital warts early in 2006. This clinical trial will be conducted at sites in Brisbane and Wenzhou, China.

Professor Ranjeny Thomas and her Dendritic Cell Biology team are also getting ready to start clinical trials in the fight against rheumatoid arthritis early 2006. The trials will be aimed at re-educating the immune system to tolerate healthy cells and thereby helping those with auto-immune diseases, notably rheumatoid arthritis. Dr Ray Steptoe’s group, which is part of this team, is making significant contributions to developing a single dose injection to prevent type 1 diabetes.

The Centre for Immunology and Cancer Research were delighted by the appointment of Professor Matthew Brown in 2005. He joins the centre after a lengthy stint in Oxford as the Deputy Director of the Botnar Research Centre. Professor Brown and his Musculoskeletal Genetics group are leading the way in identifying the genes that cause ankylosing spondylitis. Professor Brown has had success in identifying non-B27 genes that lie within the major histocompatibility complex.

Dr Nigel McMillan and his Molecular Virology group have successfully inhibited cancer cell growth in vitro and in vivo using RNA interference targeting the human papillomavirus E6 and E7 oncogenes. Using a lentiviral vector to deliver the shRNA to suppress these oncogenes will be a significant
improvement from existing methods for treating a variety of tumours including cervical cancer.

Professor Thomas Gonda and Dr Brian Gabrielli from the Centre for Immunology and Cancer Research are developing the first Australian facility to create a retroviral library comprising the entire human genome which will then be screened to isolate genes of interest based on their functions. The centre received a total of $3 million funding from the National Health and Medical Research Council Medical Bioinformatics, Genomics and Proteomics Program and the ARC Linkage Infrastructure and Equipment Facilities program to enable this project. The work will be performed in conjunction with Dr Sean Grimmond Institute of Molecular Biology, at University of Queensland, and Dr Simon Barry, University of Adelaide.

Associate Professor Nicholas Saunders in conjunction with the Cancer Collaborative Group has initiated a series of trials to try to exploit the state-of-the-art technologies and advances in understanding of cancer biology in delivering improved patient outcomes. In particular the Cancer Collaborative Group is involved in using gene profiling to predict disease progression in patients with chronic lymphocytic leukaemia and to predict chemotherapeutic response in patients with osteosarcoma.

Current Research Activities

Molecular Oncogenesis Group
Function and characterisation of the Schlafen gene family – potential regulators of, haemopoietic cell proliferation, differentiation and function.

Role of Myb in estrogen receptor-positive breast cancer.

Identification of oncogenes in myeloid leukaemia by retroviral expression cloning.

Development of an arrayed retroviral expression library amenable to high-throughput screening (with B. Gabrielli, S. Grimmond (IMB), S. Barry (University of Adelaide)).

Epithelial Pathobiology Group
The Epithelial Pathobiology Group has the following three aims:

To understand the molecular basis for squamous differentiation.

Identify how this process is disrupted in squamous cell carcinoma development.

To exploit this knowledge in the development of novel therapeutic strategies.

In addressing these aims the group have the following specific projects:

Examining the role of E2F in Squamous Cell Carcinoma development and their potential role in cancer therapy.

Defining the role of the glutathione peroxidases in Squamous Cell Carcinoma development.

Identifying the molecular events that initiate squamous differentiation.

Exploring the use of histone deacetylase inhibitors in the treatment of head and neck squamous cell carcinoma.

Exploring the use of cancer profiling as a clinical tool for aiding in patient treatment choice.
Clinical Trials in conjunction with the Princess Alexandra Hospital Cancer Collaborative Group

Using gene profiling to predict disease progression in patients with chronic lymphocytic leukaemia.

Predicting chemotherapeutic response in patients with osteosarcoma.

Cell Cycle Group

Investigation of the function of the unique form of mitotic MEK1.

Identification of how histone deacetylase inhibitors disrupt mitosis.

Investigation of the role of cyclin A/cdk2 in regulation of G2/M transition.

Investigation of the molecular responses to ultraviolet radiation in skin and how disruption of these contributes to melanoma.

Molecular Virology Group

Using microarray technology to develop a genetic profile of progression in chronic lymphocytic leukaemia.

Investigating the role of the papillomavirus oncogenes in cancer.

Developing novel therapies based on RNA interference for advanced cervical cancer.

Investigating viral evasion of the interferon response.

Dendritic Cell biology

Clinical Trials

A prospective study to evaluate the incidence of cardiovascular events and atherosclerotic disease relative to clinical outcome and joint damage in early rheumatoid arthritis.

Phase 1 clinical trial of autologous dendritic cells to induce antigen-specific tolerance.

Other Research

Induction of antigen-specific tolerance through inhibition of RelB function in dendritic cells.

Particulate systems for the co-delivery of antigen with immunomodulator for the treatment of Autoimmune Disease.

Migration and differentiation of dendritic cells and monocytes in inflammatory arthritis.

Immunotherapy Group

Clinical Trials

A phase 1b trial of HPV VLPs as immunotherapy for genital warts.

Other Research

Animal Models of immunotherapy for cancer and skin disease.

Molecular and cellular basis of tolerance to peripherally presented antigen.

Codon usage as a determinant of targeted protein expression.
Musculoskeletal Genetics Group

Genomewide association mapping in AS. The Group are part of the Wellcome Trust Case-Control Consortium (http://ccc.sanger.ac.uk/). This study will initially investigate 15,000 non-synonymous and MHC tagging SNPs in 1000 AS cases and 1500 controls, giving us unprecedented data regarding genetic influences on AS-susceptibility and severity.

IL-1 genetics. The confirmed identification of the IL-1 gene complex as a major contributor to AS-susceptibility is arguably the most exciting finding in AS pathogenesis since the report of the association of HLA-B27. Our further research in this area includes both genetic and functional studies into the role of IL-1 variants in AS.

The group is coordinating an international prospective meta-analysis of IL-1 genetic variants as part of the International Genetics of Ankylosing Spondylitis Consortium, and pursuing further mapping in ethnically diverse populations to pinpoint the true disease-associated variants.

The group is studying the impact of IL-1 inhibition in models of AS.

Biomarkers and AS. The current diagnostic delay from onset of symptoms in AS to diagnosis is 10 years in the United Kingdom, and is similar in other developed countries. There is currently no means of predicting the likely severity of cases. The Group aims to develop biomarkers for diagnosis and disease prediction in AS. Current studies involved include:

Recruiting a well-characterised cohort of 1000 AS patients and 1000 healthy controls from centres around Australia, to obtain biological samples for genetic, genomic and proteomic studies.

Establishing an Australian Longitudinal Inception Cohort Study to develop diagnostic algorithms involving biological and imaging methods to improve the sensitivity and specificity of these measures in early AS.

Genetics Research Study on Ankylosing Spondylitis

Blood sample and clinical data collection from patients and healthy controls for genetic analysis.
Other Grants

$5,000. University of Queensland. Dr Claudia Popa UQ Postdoctoral Fellow Maintenance Funds. (Claudia Popa)

$150,000. ARTHFA. Chair in Rheumatology. (Ranjeny Thomas)

$115,000. ARC. Function of the unique mitotic form of MEK. (Brian Gabrielli)

$65,000. LIONS. Improving vaccines against Viruses and Tumours: Optimising the cytotoxic T lymphocyte response. (Graham Leggatt)

$5,000. UQ. Dr Keith Dredge UQ Postdoctoral Fellowship Maintenance Component. (Keith Dredge)

$40,000. CORIDON. Coridon Agreed Funding for Kong-nan - Industry Fellowship from NHMRC "Codon usage, tRNA abundance and targeting gene expression". (Kong-nan Zhao)

$71,000. QCFN. Using yeast model to study the functional roles of three early genes in the life cycle of Bovine Papillomavirus Type 1. (Kong-nan Zhao)

$37,000. WESLEY. Predicting clinical response of osteogenic sarcoma to chemotherapy using gene expression profiling. (Nicholas Saunders)

$153,551. GPRWMF. Developing E2F inhibitors as a potential therapeutic strategy for the treatment of head and neck squamous cell carcinoma. (Nicholas Saunders)

$150,000. PAH. Cancer collaborative Group: QCF Collaborative research grant funds.

$49,000. PAH. Equipment Funding. (Brian Gabrielli)

$7,500. PAH. Improving the anti-tumour activity of histone deacetylase inhibitors. (Brian Gabrielli)

$71,700. QCFN. The role of NKT and CD8 cells in tumour immunotherapy using epithelial tumour models. (Graham Leggatt)

$68,000. LIONS. Targeting Cell Cycle Checkpoints to treat Cancer. (Heather Beamish)

$166,996. CRIUSA. A phase IB trial of virus like particle immunotherapy for HPV associated infection. (Ian Frazer)

$245,924. WELLAU. Study of HPV 6L 1 virus like particles as therapeutic vaccine for genital warts and recurrent respiratory papillomatosis. (Ian Frazer)

$2,500. WIT. Women in Technology – Ministerial Smart State Award – Travel Scholarship. (Ibtissam Abdul-Jabbar)

$20,000. PAH. Immunological therapies for cancer and autoimmunity. (Ranjeny Thomas)

$233,750. DENDRIGHT. BIF Grant (Ranjeny Thomas)

$16,000. Receptor for Advanced Glycation End products and cardiovascular disease risk in subjects with Rheumatoid Arthritis. (Ranjeny Thomas)

$116,660.20. JDFINT. Prevention of diabetes by induction of tolerance in memory CD8+ T Cells. (Raymond Steptoe)

$50,000. PAH. Induction of tolerance in memory CD8+ T cells. (Raymond Steptoe)

$24,000. UQ. Mechanisms of dendritic cell-induced peripheral T-cell tolerance (Raymond Steptoe)

$30,000. RCH. A new strategy for successful liver cell transplantation for children with liver disease (A cell growth on-off switch to selectively proliferate transplanted hepatocytes: implications for the treatment of paediatric and adult liver disease) (Thomas Gonda)

$71,700. QCFN. Optimising immunotherapy in tumour antigen experienced host. (Xiao Song Liu)

Publications

Journal Articles


Cavanagh L, Boyle C, Smith L, Padmanabha with Fork head-associated domain and Ring Finger domain mediated mitotic checkpoint arrest. (Andrew Burgess)

$113,500. NHMRC. NHMRC Research Fellowship. (Brian Gabrielli)

$181,500. NHMRC. Identification of oncogenes from myeloid leukaemias by retroviral expression cloning. (Thomas Gonda)

$565,993. NHMRC. Immunological therapies for cancer and autoimmunity. (Ian Frazer)

$71,700, QCFN. The role of NKT and CD8 cells in tumour immunotherapy using epithelial tumour models. (Graham Leggatt)

$68,000. LIONS. Targeting Cell Cycle Checkpoints to treat Cancer. (Heather Beamish)

$166,996. CRIUSA. A phase IB trial of virus like particle immunotherapy for HPV associated infection. (Ian Frazer)

$245,924. WELLAU. Study of HPV 6L 1 virus like particles as therapeutic vaccine for genital warts and recurrent respiratory papillomatosis. (Ian Frazer)

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$71,700. QCFN. Optimising immunotherapy in tumour antigen experienced host. (Xiao Song Liu)

Publications

Journal Articles


The Pathogenesis of Ankylosing Spondylitis; In: Rheumatology (Weisman, Reveille, eds), Elsevier.

Post Graduate Students
PhD. in progress
Daniel Clarke
Rachel De Kluvyer
Tom Fothergill

Tom Fothergill
PhD, in progress
Post Graduate Students


Suad Hannawi
Aaron Irvine
Montree Jaturanpinyo
Sharmal Narayan
Brent Neumann
Lisa Putral
Robyn Warrener
Fang Joe Zhou

PhD, Commenced in 2005

Honours students 2005
Megan Bywater
Daryl Lim
Alice McNally
Craig Moore
Henry Tang
Honours students 2005/2006
Calvin Sum
Ashleigh Linville

Professor Ian Frazer
CSIRO Eureka Prize 2005.

Professor Ranjeny Thomas

Public Service Relevant to Research
Professor Ian Frazer
National Health and Medical Research Council
Program Grants Committee (Chair).

National Health and Medical Research Council/Juvenile Diabetes Research
Foundation Program Committee (Chair).

Editorial Board, Virology.

Directorships (For Profit organisations):
Condor Pty Ltd 2002- present.

Implicit Biosciences Pty Ltd 2005-date.
Diabetes Vaccine Development Centre 2003 - present.

Directorships (Not for Profit organisations):
Queensland Cancer Fund 2000 – present.
Cancer Council Australia 2002 – present (currently vice-president).

Juvenile Diabetes Research Foundation
Pancreatic Islet Transplant Program 2005 – date.

Dr Brian Gabrielli
Adjunct Associate Professor School of
Biological and Biomedical Science, Griffith
University.

Centre for Immunology and Cancer
Research Postgraduate Coordinator.

Member Princess Alexandra Hospital Research Committee 2003-present.

Member Centre for Immunology and Cancer Research Board 2003 – present.


Member of National Health and Medical Research Council Oncology Grant Review

GRP Panel, National Health and Medical Research Council. 2002-present.

Panel review of grants for discipline of inflammation or immunology

Editorial Board, Wiener Klinische
Wochenschrift. 2001-present. Editorial role for the field of rheumatology
Pfizer fellowship Panel. 2005. Panel review of Australia wide fellowship applications

Ad hoc reviewer for approximately 10 national and international granting bodies, including Wellcome Trust International, Whitehead Fellowships, New York, Fondazione Telethon/Juvenile Diabetes Research Foundation International (Telethon/ JDRF) partnership programme in Type 1 diabetes in Italy. 1995-present.

Media comment on rheumatoid arthritis prognosis, treatment, and research, and on
tumour immunotherapy. 1994 – Present.

Mentoring young scientists and medical students. 1994 - Present. Reviewing grant applications, papers, supporting research and careers of young scientists through discussion
Scientific Committee Arthritis Foundation of Australia. 1995-present. Assess, rank and recommend funding for approximately 50
grants per year
Scientific Committee Princess Alexandra Hospital Foundation. 2004 - Present. Assess, rank and recommend funding for approximately 30 grants per year
Princess Alexandra Hospital Research
Committee member. 1995-1996 and 2004-

Community
Lions, Rotary Club invited speaker. Provide lay
persons’ overview of research work.

Annual General Meeting Speaker, Arthritis
Foundation of Qld. 1994-present.

Scientific Programme Committee, Australian
Rheumatology Association (ARA).

Professor Thomas Gonda
Member, Australian Research Council
College of Experts on Biological Sciences and
Biotechnology (2003-1

Member, National Breast Cancer Foundation
Expert Group on Strategic Planning (2003)

Associate Professor Nicholas Saunders
Adjunct Associate Professor School of
Biomedical Sciences

Head of Cancer Profiling Unit, Centres for
Health Research, PAH

Editorial Board for “Cancer Genomics &
Proteomics”

Editorial Board for “Recent patent reviews on
anti-cancer drug discovery”. Bentham science
Publishing.

Dr Nigel McMillan
International Board Member, International
Society for Interferon and Cytokine Research.

Organising committee for “New Directions in
Leukaemia Research” conference.

Ad hoc reviewer for National Health and
Medical Research Council, Queensland
Cancer Fund.

Journal reviewer “Journal of Virology,
Archives of Virology, Journal of Leukocyte
Biology, Journal of Molecular Medicine, The
International Journal of Biochemistry & Cell
Biology, Breast Cancer Research, International
Journal of Cancer”.

Professor Matthew Brown
Associate Editor, Rheumatology.

Associate Editor, Genes and Immunity.

Assistant Editor, Arthritis and Rheumatism.

Arthritis Research Campaign (UK), Research
Steering Committee member.

Arthritis Research Campaign (UK), Strategic
Development Committee member.

Assessment in Ankylosing Spondylitis (ASAS)
Consortium, Executive Council Member.

Senior Research Fellow, Botnar Research
Centre, University of Oxford.

Fellow of St Peter’s College, Oxford.
With the acquisition of state-of-the-art mass spectrometry, new high-throughput techniques have been developed for tacrolimus, everolimus and mycophenolate and a method has been developed for the measurement of omega-3 fatty acids to support clinical trials using these supplements. In parallel with these research developments, the availability of the tacrolimus therapeutic drug monitoring service has now been extended to seven days per week.

Research is ongoing into the pharmacokinetics and pharmacodynamics of sirolimus, mycophenolate and tacrolimus and population studies have been performed in a range of transplant groups.

Drug utilisation evaluation and pharmacovigilance studies have included drotrecogin alfa, novoseven and ticarcillin/clavulanate and a review of our hospital’s experience with heparin-induced thrombocytopenia.

**Current Research Activities**

Development and evaluation of high-throughput HPLC-MS/MS methods for immunosuppressant drugs

Development and evaluation of new HPLC-MS/MS methods for aldosterone

Drug utilisation evaluation: drotrecogin alfa; ticarcillin/clavulanate, Novoseven

Heparin-induced thrombocytopenia

Drug-induced acute renal failure

**Clinical Trials**

Investigation of a relationship between free mycophenolic acid and toxicity early post renal-transplant.
Other Research

Established and performed a validation on a high-throughput HPLC-tandem mass spectrometric method for tacrolimus measurement. This methodology is now used in routine clinical service.

Established a rapid method for the measurement of the immunosuppressant everolimus by HPLC-tandem mass spectrometry that is suitable for current therapeutic drug monitoring practices.

Evaluation of internal standards for the measurement of cyclosporin by HPLC-tandem mass spectrometry.

Established a novel HPLC-tandem mass spectrometric method for the quantification of tacrolimus that used two scanning modes, selected reactant monitoring and MS3. Both scan modes provided quantitative results, but the use of an extra degree of fragmentation for MS3 provides another level of assurance to the lack of interference and thus quality of the result. This is particularly important in the clinical setting where patients are receiving multiple drug regimens and can be in extreme disease states. This scan combination may be useful in applying HPLC-tandem mass spectrometry to the regulated clinical environment.

Development of a method for the measurement of omega-3 fatty acids to support clinical trials on omega-3 fatty acid supplementation and coronary heart disease.

Development and validation of a HPLC-tandem mass spectrometric method for the measurement of free mycophenolic acid to support ongoing clinical trials.

Financial Support

$175,000. Waters Corporation (Manchester, UK). Development of HPLC-MS/MS assays of clinical significance and utility. (Paul Taylor)

$250,000. Australian Bioanalytical Services Pty Ltd Applied Biosystems – MDS SCIEX (Toronto, Canada). The development and validation of HPLC-tandem mass spectrometry methods for clinically relevant compounds. (Paul Taylor).

Publications

Journal Articles


Articles Accepted for Publication


Published Abstracts


Book Chapters

Lectures and Presentations
Paul Taylor


Clinical Applications of LCMS. Hong Kong, November 2005. Workshop (Invited Speaker): LC MS method development in the clinical laboratory.


9th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology. Louisville USA, April 2005. Symposium (Invited Speaker): Mass spectrometry in the clinical laboratory.

9th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology. Louisville USA, April 2005. Workshop: Introduction to HPLC-MS.


Public Service Relevant to Research
Paul Taylor
Editorial Board: Therapeutic Drug Monitoring

Peer Review for the following journals: Clinical Chemistry, Journal of Chromatography A and B, Therapeutic Drug Monitoring, Clinical Biochemistry and Rapid Communications is Mass Spectrometry.

Associate Professor Peter Pillans
Australian Drug Evaluation Committee (ADEC)
Australian Adverse Drug Reactions Advisory Committee (ADRAC)
Queensland Hospitals Drugs Advisory Committee (QHDAC)

The Clinical Services Evaluation Unit is a unit within the Safety, Quality and Risk Management directorate of the hospital. The mission of Clinical Services Evaluation Unit is to assist the Princess Alexandra Hospital Health Services District in improving clinical outcomes, efficiency of health services, and patient satisfaction. The major objectives of the unit are to:

- Foster and support evidence-based approaches to practice
- Assist clinicians with the evaluation and operationalisation of clinical care improvement
- Develop efficient methods to measure performance and outcomes
- Provide advice, support and training in clinical service evaluation and improvement methods

**Current Research Activities**

Project managing the pilot testing of web-based clinical audit software (Bluespiers).

Support to director of Safety and Quality Risk Management in evaluating electronic clinical audit systems already existing in clinical departments at Princess Alexandra Hospital.

Support in trialling and evaluating CORPALIGN project management software and making recommendations for continued use.

Clinician training in use of clinical audit software – Audit Maker (free software from the Australian Centre for Evidenced Based Practice).

Data base development and support for cardiac resuscitation indicator data base.

Data collection and feedback for the Clinical Practice Improvement Centre Cardiac Collaborative.

**Staff**

**Associate Professor Ian Scott,**
FRACP, MHA, Med, Director & Medical Advisor

**Annabel Hickey,**
MMSc (Clin Epi), BAppSc (OT), Manager and Allied Health Advisor

**Mark Jones,**
(BSc), Biostatistician

**Kerrie Holzhauser,**
B Health Sc (Nursing), Nursing Advisor

**Kim Johns,**
B.Nursing, Grad Cert (Hlth Services Management), Clinical Analyst

**Dave McNaughton,**
BAppSc (OH&S), CNC Database Manager

**Associate Professor Ian Scott and Team**

Clinical Services Evaluation Unit
Financial Support

CSEU funded Practice Improvement Projects

$60,000 has been provided or committed to 6 clinician initiated projects that were completed or operated throughout 2005:

Effectiveness and cost comparison of two different methods of delivering a weight management program to overweight patients with chronic liver disease. Emma Osland, Merrilyn Banks, Dr Elizabeth Powell, NOSS and Gastroenterology, 1/7/04-14/3/05

Bloodstream infections in haemodialysis patients: improving preventative and management strategies (Dr Geoff Playford, Renal Unit, 18/8/04-16/2/05)

Compression Therapy Non-concordance in Patients with Venous Leg Ulceration (active or healed) within the Princess Alexandra Hospital Outpatient Wound Management Clinic (Dr Harry Gibbs, Michelle Roc, 6/9/04-2/9/05).

Assessing quality of, and identifying gaps in information handover in ICU (Dr Bala Venkatesh, 1/11/04-9/9/05)

Reducing waiting times in Oncology Clinic and Day Care (Vanessa Roche, Sue Hausmann, Dr Damien Thompson, Dr Devinda Gill, 13/12/05-13/6/06)

Evaluation of a new programme for the management of neurogenic bowel in people with spinal cord injury (Dr Tim Geraghty, Ellen Eugarde, Alison New, 13/12/05-1/6/06)

Statistical Consulting provided to Princess Alexandra Hospital staff

Dr Bala Venkatesh: Critical hypoxic thresholds in tissues for induction of apoptosis

Dr Peter Kruger / Dr Maneesha Tol: Statin therapy for patients with bacteraemia

Dr Roslyn Purcell: Indocyanine green elimination to assess liver function

Mary Boyde / Robyn Peters: Resuscitation of patients after cardiac arrest in hospital

Kerri Holzhauser: The effect of aromatherapy massage with music on the stress and anxiety levels of emergency nurses

Dr Luke Garske: Physiologic study of pleural effusion

Dr Josie Larby: Non-small cell lung cancer with synchronous cerebral metastasis – predictors of survival

Russell Saal: A new test for early detection of relapse in leukemia patients

Jennifer Wallace / Dr Ross Cuneo: Sweat rates for growth hormone deficient people

Assistance in developing clinical indicators for several PIP funded projects (see below).

Development of evaluation framework for clinical audit software tools and new AUSLAB browser (AUSCARE).

Development of evaluation framework and support for data collection and analysis for:

- Dementia care on acute wards (in assistance with NICS),
- Utilisation of outpatient clinics,
- Quality of GP referrals to hospital,
- Elective booking and correct site surgery evaluations and
- Quality of information received by GPs from Neurology and Ophthalmology.

Assistance in developing and evaluating Nursing Assessment and Care Plan.

Support to program for training clinicians in management of behavioural disturbances in the elderly and implementing care protocols across Princess Alexandra Hospital.

Development and implementation of methods for monitoring and evaluating decision-making in regards to insertion of feeding tubes.

Support in developing elderly risk screening tool in collaboration with Academic Unit in Geriatric Medicine.

Project management of roll-out of electronic discharge summary throughout Princess Alexandra Hospital.

Support in developing clinical practice guidelines:

- Advance health directives and advance care planning
- Outpatients clinical guidelines
- Tracheostomy guidelines.

Revision of patient self-management guides for cardiac conditions.

Support to clinical projects funded by Queensland Health / Princess Alexandra Hospital include:

- Mouth care project
- Ordering of computerised tomograph pulmonary imaging in The Emergency Department
- Haematology-Oncology outpatient patient flows
- Redesign of outpatients and Emergency care processes.

Analysis of utilisation of medical speciality clinics in regards to attendance rates, new/old patient ratio, and long-term patient monitoring. This project was combined with a systematic review of the effectiveness of interventions for improving clinic utilisation. Results presented at medical grand grounds and summary report produced.

Assistance to elective surgery booking project.

Assistance to multidisciplinary team (medical, nursing and allied health) currently trialling guideline and worksheets in medical wards, with procedures placed on hospital procedures intranet site.
Researching evidence about appropriate implementation models for chronic disease management.

Production of a needs analysis and proposed strategies report for improving clinical handover and optimising patient safety. Currently participating with a working group of the Patient Safety Centre in developing and implementing state wide handover protocols.

Project management of the Venous Thromboembolism Project sponsored by National Institute of Clinical Studies aimed at improving rates of use of VTE prophylaxis in hospitalised patients.

Publications

**Associate Professor Ian Scott**
(already listed under Department of Internal Medicine)

**Journal Articles**


**Articles Accepted for Publication**


Lectures and Presentations

**Associate Professor Ian Scott**
(listed under Internal medicine and Clinical Epidemiology research report)

**Mark Jones**

“Quality of life measurement in cancer clinical trials”: Presented at the Princess Alexandra Hospital Cancer Collaborative Group monthly meeting, February 2005.

Awards

**Associate Professor Ian Scott**
(listed under Internal Medicine and Clinical Epidemiology Research report)

**Mark Jones**


Public Service Relevant to Research

**Associate Professor Ian Scott**
(listed under Internal Medicine and Clinical Epidemiology Research report)
The Colorectal Unit at the Princess Alexandra Hospital was formed in 1990, and aims to provide a comprehensive adult colorectal service to the Southern Area Health District and referring centres. The Unit receives elective, urgent and emergency referrals. The consultant surgical staff provide a continuous on call service supported by junior surgical staff. The year 2005 has again seen Jodi Cooper in the Acting Assistant Director of Nursing role, with Catherine Bent and Cheryl Butterworth undertaking the role of Acting Nurse Unit Manager during her absence. Displays were set up in the foyer by nursing staff for the Crohn’s/Colitis Awareness week and for Bowel Cancer week; both were very well received. Jodi Cooper, Cheryl Butterworth and Brooke McCurley continue to lecture at the Queensland Cancer Fund in relation to bowel cancer and the role of surgery. 4E has also seen the new appointment of five graduate nurses throughout the year. Additionally in 2005 Dr Brian Miller, Jodi Cooper, Cheryl Butterworth and Catherine Bent travelled to North America to visit the Colorectal Unit at the Cleveland Clinic, Ohio for one week. The visit was partially financed by the Queensland Cancer Fund and the Princess Alexandra Hospital Society, and allowed the Unit to sustain strong international links with the American organisation. Both nursing and medical staff were able to introduce best practice initiatives into the Colorectal Unit at Princess Alexandra Hospital thus ensuring better patient outcomes.

The clinical focus of the Unit is on difficult colorectal problems such as rectal cancer, complicated inflammatory bowel disease and complex perianal problems. An audit is conducted monthly relating to the clinical indicators for the Unit, namely wound infection, thrombo-embolic disease, anastomotic leaks and mortalities. The rates in all of these areas are very favourable compared to reports from other major centres. The Colorectal Project has been collecting data on colonic and rectal cancer cases handled through the Unit and at Princess Alexandra Hospital for more than 25 years, and the computer system for this was updated during 2005. In addition the unit has the largest readily available and fully categorized clinical photo database at this hospital with over 2400 digital photos dating back to 1998. These extensive databases have produced and enhanced much of the Unit’s research output over the past decade, and continue to do so now with clinical studies underway on local excision for rectal cancer, the predictive value of Carcino Embryonic Antigen in recurrent bowel cancer, intestinal endometriosis, diverticular disease in young people, Gastro Intestinal Stromal Tumour, and indeterminate colitis.

The Unit plays an active role in graduate and postgraduate general surgical teaching at all levels in the hospital. The major thrust at the graduate level is with the 3rd year medical students who spend 5 terms, each of six weeks, at the Princess Alexandra Hospital in General Surgery. They are administered by Dr Brian Miller and tutored by consultants on the Colorectal Unit every week. The Unit also participates in, with Dr Jon Cohen as their administrator, the clinical training sessions for all general surgical registrars at this hospital.
**Current Research Activities**

The Colorectal Unit’s main focus is with clinical studies of long term outcome in certain key areas of colonic and rectal disease such as cancer and inflammatory bowel disease. All cancer patients being treated and followed by the Unit are assembled on a data base by a dedicated research assistant, and this has been used extensively for generating retrospective studies. A list of interesting topics requiring investigation that could be tackled by a junior surgical trainee is kept and distributed to incoming basic surgical trainees as necessary, both on the Colorectal Unit and other general surgical Units at the Princess Alexandra Hospital. Several of the registrars have taken these through to completion and publication in refereed surgical journals. Current topics include retrospective studies on diverticular disease in young people, Gastro Intestinal Stromal Tumour, volvulus (accepted for publication in Canadian Journal of Surgery), indeterminate colitis, intestinal endometriosis, angiodysplasia and the influence of Carcino Embryonic Antigen measurement on the treatment of colorectal carcinoma. The results of stapled haemorrhoidectomy at the Princess Alexandra Hospital are under investigation, and a prospective study comparing short and long course radiotherapy given preoperatively for rectal cancer is also underway in conjunction with the Department of Radiotherapy.

A study measuring the effectiveness of general surgical teaching at Princess Alexandra Hospital of University of Queensland graduate students using voluntary pre- and post-testing in 3rd year, is coordinated by consultant staff on the Colorectal Unit. The results are distributed as a comparative bar graph to all teaching hospitals in the Brisbane area including Nambour, Caboolture, Redcliffe, Royal Brisbane Hospital, Princess Alexandra Hospital, Mater, Greenslopes, Queen Elizabeth II, Logan and Ipswich, in the form of an annual audit.

**Clinical Trials**

Prospective trial of ‘short course’ versus ‘long course’ pre-operative radiotherapy for low rectal cancer. In collaboration with The Department of Radiotherapy at Princess Alexandra Hospital. Dr David Schache is a member of the Management Committee for this trial.

**Other Research**

Colonial Stenting for Malignancy. Is This the Way To Go?

Stapled Haemorrhoidectomy:- The Princess Alexandra Hospital Results.

Indeterminate Colitis; Treatment and Outcome at Princess Alexandra Hospital.

Intestinal Endometriosis:- Presentation and Outcome at Princess Alexandra Hospital.

Value of Carcino Embryonic Antigen estimations in the Management of Recurrent Colorectal Cancer.

Gastro Intestinal Stromal Tumour – Local Results at Princess Alexandra Hospital.

Incidence and Outcome of Volvulus at Princess Alexandra Hospital. (Accepted for publication).

Outcome of Younger Patients with Untreated Diverticulitis at Princess Alexandra Hospital.

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**Patents/Trademarks**

Australian trademark successfully obtained:

- Miller’s Visceral Retainer (MVR).

See: [http://www.millersurgicaldesigns.com/millersvisceralretainer.htm](http://www.millersurgicaldesigns.com/millersvisceralretainer.htm)

**Outreach Surgery**

To: WEST TIMOR. Under auspices of the "Overseas Specialist Surgical Association of Australia".

Dr Brian Miller: Two visits in April and October 2005 (for a total of one month) doing charitable surgery in Kefamenanu, West Timor. This town has a 60-bed Government hospital with two poorly equipped operating theatres in the highlands of West Timor where surgical services are very limited and neglected surgical conditions of all sorts are common. The Overseas Specialist Surgical Association of Australia sends teams of six (two surgeons, two theatre nurses and two anaesthetists) from Australia for four visits of a fortnight each per year. On average 60 operations are done and 160 consults seen on each visit.
Longterm Outcome of Entero-Vesical Fistula at Princess Alexandra Hospital.

Influence of Perforation of Colorectal Carcinoma on Outcome.

Local Excision for Rectal Cancer: Results at Princess Alexandra Hospital.

Angiodysplasia at Princess Alexandra Hospital: Aetiological Factors and Outcome.

Financial Support

Grants
$50,000. Royal Australian College of Surgeons - Conrod Trauma Fellowship for 2005. (Dr David Theile)

$40,000. Donation to Colorectal Project from the family of a patient, raised through public auction, (Dr Jon Cohen)

$6,000. Ethicon (Johnson & Johnson Ltd) for the Colorectal Project at Princess Alexandra Hospital. Ongoing annual grant. (Dr Jon Cohen)

$6,000 Tyco, for the Colorectal Project at Princess Alexandra Hospital. Ongoing annual grant. (Dr Jon Cohen)

$1000. Johnson & Johnson Ltd, Ethicon Division, awarded in 2005: Prize to the winner of the annual Neville Davis Registrar Research Competition. Ongoing grant for this competition. (Dr Brian Miller)

$2000. Johnson & Johnson Ltd, grant in 2005 to support Dr Miller’s outreach surgery visit to West Timor. (Dr Brian Miller)

$2000. Society Nursing Scholarship for assistance with international travel expenses (Cheryl Butterworth)

$6000. Queensland Cancer Fund Nursing Scholarship for assistance with study improving patient outcomes in relation to caring for patients with cancer. (Jodi Cooper)

Publications

Journal Articles

Articles Accepted for Publication
Lau K, Miller BJ: - “Tangles in the Dark: A Study of Large Bowel Volvulus.” Accepted for publication by the Canadian Journal of Surgery.

Lectures and Presentations


Cheryl Butterworth: - Lecture delivered to Nurses at the Queensland Cancer Fund entitled – Management and Support of Aboriginal and Torres Strait Islander People with Cancer

Brooke McCurley: - Lecture delivered to Nurses at the Queensland Cancer Fund entitled – Surgery and the Management of Bowel Cancer

Jodi Cooper: - Lead a focus group for people with bowel cancer and their carers at the Queensland Cancer Fund as a part of Bowel Cancer Awareness Week

Jodi Cooper: - Participated as part of an expert panel at the Queensland Cancer Funds Cancer Helpline – as a initiative of Bowel Cancer Awareness Week

Public Service Relevant to Research

Dr Brian Miller
Editorial reviewer for “Australian and New Zealand Journal of Surgery”, and “Injury”.

Dr Jon Cohen
Editorial reviewer for “Australian and New Zealand Journal of Surgery”.

Dr David Theile
Editorial reviewer for “Medical Journal of Australia” and “Australian and New Zealand Journal of Surgery”.

research - key to health
The Department of Diabetes and Endocrinology at the Princess Alexandra Hospital houses the Centre for Diabetes and Endocrine Research and the Diabetes and Endocrinology clinic.

**Research**

The Centre for Diabetes and Endocrine Research, an independently-funded research centre, was established in 2004 and is part of the School of Medicine, University of Queensland. Its mission is to provide cutting edge research, from bench to bedside, for the treatment and prevention of endocrine disorders. The Centre for Diabetes and Endocrine Research brings together a number of allied research programs in Diabetes, Endocrinology and Metabolism. The Centre’s main research interests include Diabetes (Type I and II), Obesity, Cell Signalling, Liver Metabolism, Bone Research, Pregnancy, Functional Genomics and Endocrine Cancers. The Centre for Diabetes and Endocrine Research is internationally recognised for research into obesity and is one of the few laboratories in the world to carry out research on human adipose tissue and cells. Research from the centre has led to the formation of a venture backed, ‘start-up’ company; Adipogen Pty Limited. Adipogen’s interest is the development of novel treatment strategies for obesity and the overweight.

In 2005 the Centre for Diabetes and Endocrine Research underwent significant growth to approximately fifty researchers, students and support staff. Major highlights for The Centre for Diabetes and Endocrine Research during the year included three National Health and Medical Research Council grants and three prestigious postdoctoral fellowships. In addition, progress on the adiponectin project has been outstanding during year with several key publications in press which are expected to be published in early 2006.

**Staff**

**Professor John Prins**  
MBBS, PhD, FRACP, Department Director, Director of Centre for Diabetes and Endocrine Research

**Dr Margaret Williamson**  
MBBS, FRACP, Senior Visiting Endocrinologist

**Associate Professor Ross Cuneo**  
MBBS, PhD, FRACP, Endocrinologist (UQ)

**Associate Professor Graeme McDonald**  
MBBS, PhD, FRACP, Centre for Diabetes and Endocrine Research Group Head

**Dr Anthony Russell**  
MBBS, FRACP, Full-time Endocrinologist, Centre for Diabetes and Endocrine Research Group Head

**Dr Trisha O’Moore-Sullivan**  
MBBS, FRACP, Part-time Endocrinologist, Centre for Diabetes and Endocrine Research Group Head

**Dr David McIntyre**  
MBBS, PhD, FRACP, Centre for Diabetes and Endocrine Research Group Head

**Dr Jon Whitehead**  
PhD, Centre for Diabetes and Endocrine Research Group Head

**Dr Edith Gardiner**  
PhD, Centre for Diabetes and Endocrine Research Group Head

**Dr Louise Hutley**  
PhD, Centre for Diabetes and Endocrine Research Group Head

**Dr Wenda Shurety**  
PhD, Research Manager

**Dr Clair Sullivan**  
MBBS, FRACP, MD, Senior Research Fellow

**Dr Kim Bridle**  
PhD, Senior Research Fellow

**Dr Uwe Dressel**  
PhD, Senior Research Officer

**Dr Leonie Callaway**  
MBBS, FRACP, Research Fellow

**Dr Jenny Moffitt**  
PhD Postdoctoral Fellow

**Dr Anthony Bachmann**  
PhD, Postdoctoral Scientist
Clinical

The Diabetes and Endocrinology Department provides a tertiary level in- and out-patient clinical service in diabetes and endocrinology. The service includes consultancy to other departments and services within the hospital and an outreach service every two months to Mt Isa Base Hospital. The clinical service is supported by a laboratory providing a genetic screening service for Australasia for inherited disorders of endocrine tumours and of calcium regulation abnormalities.

Teaching

Professor John Prins, Associate Professor Graeme Macdonald and David McIntyre, Drs Trisha O’Moore-Sullivan, Anthony Russell, Clair Sullivan and Janelle Nisbet have extensive roles in the education and training of clinicians, scientists, graduate and undergraduate students, involving lectures, tutorials and clinical bedside coaching.

Current Research Activities

Clinical Trials

- A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Determine the Efficacy and Safety of SYR110322 (SYR-322) When Used in Combination with Sulfonylurea in Subjects with Type 2 Diabetes
- A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Determine the Efficacy and Safety of SYR110322 (SYR-322) When Used in Combination with Pioglitazone in Subjects with Type 2 Diabetes
- A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Determine the Efficacy and Safety of SYR110322 (SYR-322) Compared with Placebo in Subjects with Type 2 Diabetes
- A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Determine the Efficacy and Safety of SYR110322 (SYR-322) When Used in Combination with Insulin in Subjects with Type 2 Diabetes
- A Study to Evaluate AMG 162 in the Treatment of Posmenopausal Osteoporosis
- A Randomised, Double-Blind, Placebo-Controlled, Study to Assess the Safety, Tolerability and Efficacy of L-001037536 (Cathepsin-K Inhibitor) in the Treatment of Postmenopausal Women with Osteoporosis
- A Randomised, Double-Blind, Two-Arms, Placebo-Controlled, Parallel-Group, Multicentre Study of Rimonabant 20mg/day in the Treatment of Atherogenic Dyslipidemia in Abdominally Obese Patients
- The Long Term Efficacy and Safety Assessment of a Three Year Oral Administration of S12911 in Osteoporotic Postmenopausal Women having Participated Either in Spinal Osteoporosis Therapeutic Intervention “SOTI” Study or Treatment of Peripheral Osteoporosis “TROPOS” Study
- A Double-Blind, Randomised, Placebo-Controlled, Phase 3 Study to Determine the Efficacy of Arzoxifene 20mg/day to reduce the Incidence of Vertebral Fractures and Invasive Breast Cancer Incidence in Postmenopausal Women with Osteoporosis or with Low Bone Density without Osteoporosis
- A Phase 2B, Randomised, Double-Blind, Placebo-Controlled Study to Assess the Efficacy, Safety and Tolerability of 24 Weeks Treatment with Different Doses of AOD9604 Tablets on Weight Loss in Obese Adults
A One-Year, Open, Randomised, Parallel, Three-Arm Study Comparing Exubera (Insulin, Dry Powder Pulmonary Inhaler) Vs Avandia (Roiglitazone Maleteae) and an Add-On Therapy Vs Exubera Subsititution of Sulphonylurea in Patients with Type 2 Diabetes, Poorly Controlled on Combination Sulphonylurea and Metformin Treatment

A 24-Week Randomised, Double-Blind, Parallel-Group, Multi-Centre, Placebo-Controlled Study to Evaluate the Efficacy, Safety and Tolerability of Tesaglitazar Therapy when added to the Therapy of Patients with Type 2 Diabetes Poorly Controlled on Sulphonylurea Alone

A 24-Week Randomised, Double-Blind, Parallel-Group, Multi-Centre, Placebo-Controlled Study to Evaluate the Efficacy, Safety and Tolerability of Tesaglitazar Therapy when added to the Therapy of Patients with Type 2 Diabetes Poorly Controlled on Metformin Alone

Trial to Reduce Cardiovascular Events with Aranesp Therapy

**Other Research**

The current areas of interest in the department include:

Characterisation of the role of FGF-1 in human adipogenesis with a view to identify therapeutic targets for the treatment of obesity.

Investigation of the effects of improving insulin sensitivity by lifestyle interventions or drug therapies on markers of vascular and cardiac function, in patients with obesity, T2DM and after renal transplantation.

Investigation of the mechanisms by which insulin receptor substrate-1 (IRS-1) localisation and function is regulated.

Role of IMPDH in fatty acid storage and lipid body dynamics.

Regulation of the Ser/Thr kinase Akt, which plays an important role in many of insulin's metabolic effects, in human tissues.

Insulin action and signalling in human liver - the effects of obesity, free fatty acids and adiponectin.

Investigation of metabolic differences in omental and subcutaneous adipose tissue by comparing insulin action and signalling, and adipokine release and action in adipose tissue biopsies from patients with and without insulin resistance.

Role of 11β-Hydroxysteroid Dehydrogenase in Insulin Resistance

Investigation of appropriate testing criteria for multiple endocrine neoplasia Type 1and insights into the epidemiology of the disease.

Identification of novel genes for familial hyperparathyroidism syndrome

Identification of activating and inactivating mutations of the calcium sensing receptor in patients with familial hyperparathyroidism.

Investigation of the mechanisms of appetite regulation and in particular elucidating mechanisms regulating ghrelin release and in vitro studies investigating the affects of ghrelin on the adipocyte.

Influence of the medium collected from thiazolidinedione-treated adipose tissue explants on the insulin sensitivity of human muscle cells.

Investigation of the relationship between Type 2 diabetes and chronic liver disease looking at the role of metabolic factors in the development and progression of chronic liver disease.
Improving the success and cost-effectiveness of lifestyle intervention for weight reduction in patients with obesity-related chronic disease.

Investigation of the production of the peptide hormone, Adiponectin, by human fat cells (adipocytes) and its post-translational modification and multimerisation within the secretory pathway of cells.

Investigation of the effects of insulin resistance on hepatic stellate cells and development of cirrhosis in response to liver injury; mechanisms of hepatic carcinogenesis in relation to liver injury; and clinical projects examining symptom profiles and quality of life in liver disease.

Contribution of novel glucose transporters and activated GLUT4 to basal and insulin-stimulated glucose uptake in human subcutaneous and omental adipose tissue.

Study of impaired non-insulin mediated glucose uptake in obesity and pregnancy examining the mechanisms regulating hyperosmolar induced glucose uptake in human adipose tissue.

Exploring the long term consequences of pregnancy related disorders such as pre-eclampsia, the role of ghrelin in appetite regulation in pregnancy, the impact of obesity on maternal and fetal outcomes, and the consequences of increasing maternal age on pregnancy outcomes.

**Patents**

- US Patent Application number: PCT/AU03/00826 entitled “Differentiation modulating agents and uses thereof” (granted)
- Australia patent number: PCT/AU2005/000008 entitled “Differentiation modulating agents and uses thereof” (granted)
- US Patent Application number: 60/601797 filed on 16/Aug/2004 entitled “metabolism modulating agents and uses therefore”

**Financial Support**

**Current NHMRC Grants**

- $400,000. NHMRC CCRE Grant. “Centre of Clinical Research Excellence in Cardiovascular Disease and Metabolic Disorders” (T Marwick)
- $70,000. NHMRC project grant. Insulin action and signalling in human liver - the effects of obesity, free fatty acids and adiponectin. (J Prins, J Whitehead)
- $150,000. NHMRC partnership. The Diabetes Health Research Program - A Collaborative research-based program of education, intervention and scientific discovery in Type 2 Diabetes. (J Prins)
- $70,000. NHMRC. Human Hepatic Insulin resistance. (GA Macdonald)

**Other Grants**

- $10,000. Princess Alexandra Hospital Foundation. The relationship between serum adiponectin and inflammatory state in obese adults. (GA Macdonald)
- $50,000. Princess Alexandra Hospital Foundation. Metabolic complications of liver transplantation. (GA Macdonald)
- $17,000. The George Weaber Foundation Trust. Molecular Co-ordination of IRS-1 Function. (J Whitehead)
- $45,000. Diabetes Australia Research Trust Grant. IMPDH – a potential target for inhibition of adipogenesis and obesity related problems. (J Whitehead)
- $45,000. Diabetes Australia Research Trust Grant. Multimerization and secretion of Adiponectin; potential implications for a promising anti-diabetic. (A Richards)
- $37,033. Australian Research Council. Depression and Diabetes. (J Kenardy, J Prins, C Leong)
- $10,000. Princess Alexandra Hospital Foundation. Investigation into the role of IMPDH in lipid accumulation and adipogenesis. (J Whitehead)
- $45,000. Diabetes Australia Research Trust Grant. The Regulation and Action of Placental Growth Hormone in Diabetic Pregnancies. (A Russell)
- $50,000. University of Queensland Venamore Bequest Fund. Develop Research into Osteoporosis. (J Prins)
- $90,000. University of Queensland Mayne Bequest Research Programme. A Research Program in the Metabolic Syndrome. (J Prins)

**Other Sources**

- $65,000. Lions Senior Medical Research Fellowship. Investigation into Insulin Action and Insulin Resistance. (J Whitehead)


McIntyre HD, Principal Investigator, Mater Health Services Site, ADVANCE Collaborative Group. ADVANCE - Action in Diabetes and Vascular Disease: patient recruitment and characteristics of the study population at baseline. Diabet Med. 2005 Jul;22(7):882-8


Morton AP, McIntyre HD Effectiveness and side effects of thiazolidinediones for type 2 diabetes Med J Aust. 2005 May 2;182(9):492-4


research - key to health


Articles Accepted for Publication

Armstrong KA, Prins JB, Beller E, Campbell SB, Hawley CM, Johnson DW, Isbel NM. Should an oral glucose tolerance test be performed routinely in all renal transplant recipients? Clinical Journal of the American Society of Nephrology. (in press).


Published Abstracts


McIntyre HD - Insulin replacement therapy in Type 1 diabetes – the DAFNE approach. ADS & ADEA Annual Scientific Meeting Proceedings, Perth, September 2005, p43


Book Chapters

Prins JB. Chapter: Adipocytes & their secretory products. Advances in Translational Medical Science: Lipids and atherosclerosis (Packard, Rader, eds.) (in press)


Book Chapters

Prins JB. Chapter: Adipocytes & their secretory products. Advances in Translational Medical Science: Lipids and atherosclerosis (Packard, Rader, eds.) (in press)
Lectures and Presentations

Dr Leanne Callaway

Hypertensive disorders in Pregnancy - Diploma of Obstetrics and Gynecology Course -RANZCOG, 2005 (Invited)

Radiation in pregnancy - Annual Scientific Meeting, Queensland State Committee, Royal Australasian College of Physicians.

Dr Edith Gardiner
Vitamin D Working Group at the 26th Annual Scientific Meeting of the American Society for Bone and Mineral Research, Nashville TN, USA (oral presentation selected from abstracts)

Bone and Joint Decade Queensland Research Day

Research Seminar, Rheumatology Department, Princess Alexandra Hospital

Dr Ingrid Hickman
Welcoming address and keynote speaker: 4th Medical Update University of Queensland and Gleneagles Intan Medical Centre Kuala Lumpur, Malaysia, September 2005

Australian Gastroenterological Society, Single Topic Conference, August 2005 "Lifestyle intervention as a treatment for non-alcoholic fatty liver disease"

Gastroenterology Society of Queensland, August 2005, Annual Dinner presentation "Strawberry ice cream, Fairy Floss and Dagwood Dogs – Achieving Weight Loss in our Obesogenic World". (Invited)

Australian Pituitary Foundation Ltd, July 2005 “Weight management in pituitary disease”. (Invited)

Dietitian’s Association of Australia, National Conference Full Day Workshop, May 2005 “Dietetic management of acute and chronic liver disease”.

Dietitians Association of Australia May 2005 “Obesity Interventions in the Real World”. Oral Presentation

American Association for the Study of Liver Disease (AASLD), Raised alanine transaminase and decreased adiponectin are features of the metabolic syndrome in patients with type 2 diabetes. San Francisco, November 2005.

Public Service Relevant to Research

Professor John Prins
Scientific Director, Adipogen Pty Ltd.  

Dr Anthony Russell

Dr Jon Whitehead
National Health and Medical Research Council GRP member. Editorial Advisor to the Biochemical Journal.

Dr Edith Gardner

Dr Ingrid Hickman

Dr Louise Hutley
Reviewer for both National Health and Medical Research Council and NHF Project Grants. Australian representative on organising committee for Satellite Meeting 3 (Recent Progress in Adiposcience). International Conference on Obesity to be held in 2006.

Dr Graeme McDonald

Dr Trisha O’Moore-Sullivnan
Scientific Organising Committee, International Congress of Obesity, Sydney 2006, High Cost Drug Committee

Dr David McIntyre

Dr Clair Sullivan
Co-Chair Queensland Trainees Committee, Royal Australasian College of Physicians. Member Queensland State Committee, Royal Australasian College of Physicians

Dr Leonie Callaway
Chair, Basic Training Curriculum Writing Group, Royal Australasian College of Physicians. Member, Education Strategy Implementation Board, Royal Australasian College of Physicians. Member, Congenital Anomalies Subcommittee, Queensland Health. Member, Planning Group for workshops regarding linking assessment to training for specialist trainees, Australian Medical Council. Reviewer -Internal Medicine Journal.

Dr Charlotte Widberg
Reviewer for Journal of Endocrinology
2005 was an exciting time in the Division of Diagnostic Radiology. The Division was the dominant institution at the Royal Australasian and New Zealand college of Radiologists 2005 Sydney meeting with nine posters (one in twelve).

Dr Yu Ming Tang was awarded the prestigious Mayne Health best paper presentation prize at this meeting. Many quality publications were accepted during 2005 in a variety of high impact international journals. The Department is now a strong advocate of the philosophy that participation in research and quality service delivery are symbiotic.

Current Research Activities

The Radiology Department has many active research projects including; the utility of whole spine magnetic resonance imaging in spinal infections, the cost effectiveness of using non-enhancing cortical signal abnormality on FLAIR to differentiate glioma from metastasis and a retrospective comparison of shoulder magnetic resonance imaging with arthroscopy.

Clinical Trials

The Radiology Department is involved in several dozen collaborative projects with various units within the Princess Alexandra and external institutions.
The technique: a novel and easy modification to coaxial needle biopsy using the spacer
36:87-96
abnormalities. Pediatric Radiology 2006
A. The portal vein in children: radiological
Brooks S, Wluka AE, Stuckey S, Cicuttini F. The
usual management of suspected scaphoid
adding magnetic resonance imaging to the
diagnosis of dural arteriovenous fistula. AJNR
Brooks S, Wluka AE, Stuckey S, Cicuttini F. The
Corness J, McHugh K, Roebuck D, Taylor
A. The portal vein in children: radiological
review of congenital anomalies and acquired
abnormalities. Pediatric Radiology 2006
60:87-96
coaxial needle biopsy using the spacer
technique: a novel and easy modification to
increase procedure safety. Clinical Radiology
60:926-929.
Crowe B., Sim L. An Assessment of the Effect
of the Introduction of a PACS and RIS on Clinical Decision Making at Princess
Alexandra Hospital, Brisbane, Australia (Final Report) (Proc.) Computer Assisted Surgery & Radiology, Berlin, Germany.
Jackson PE, Langlois SLeP. Introduction of picture archiving and communication system at Townsville Hospital. Australasian Radiology 2005 49, 278-282
McMenamin DS, Bhuta SS. Mesenteric panniculitis versus pancreatitis: A computed tomography diagnostic dilemma. Australasian Radiology 2005 49, 84-87
Sim L,H., Manthey K. L., Caffery L.J; An Experiences in Moving from CRT to Flat Panel LCD Monitors for Diagnostic PACS Workstations; (Proc.) Computer Assisted Surgery & Radiology, Berlin, Germany.
Dr Lora Medoro
Dr Demi Seneviratne
Dr Bronwyn Rogers
Dr Roger Livsey
Dr Michelle Nottage
Dr Mitesh Gandhi
Dr John Earwaker
Visiting Medical Officers
Gandhi M, Tang YM, Panizza B. Myxoma of the masticator space. Australasian Radiology
Leggett DAC, Sinnott SJ, Kienzle HN. Pseudoaneuerysm and DVT complicating Femoral Osteochondroma: Modularity imaging. Australasian Radiology
Ong B. Retrospective study of PICC line thrombosis. Australasian Radiology
Crowe B., Sim L. Productivity and PACS – Fact or Fiction, 2005 RANZCR Annual Scientific Meeting
Du L, Chan J, Stuckey SL. Valilation of multi-detector computed tomography in the quantitative assessment of cardiac left atrial size: a comparison to echocardiography. 2005 RANZCR 56th Annual Scientific meeting.

Publications
Journal Articles
Jackson PE, Langlois SLeP. Introduction of picture archiving and communication system at Townsville Hospital. Australasian Radiology 2005 49, 278-282
McMenamin DS, Bhuta SS. Mesenteric panniculitis versus pancreatitis: A computed tomography diagnostic dilemma. Australasian Radiology 2005 49, 84-87
Sim L,H., Manthey K. L., Caffery L.J; An Experiences in Moving from CRT to Flat Panel LCD Monitors for Diagnostic PACS Workstations; (Proc.) Computer Assisted Surgery & Radiology, Berlin, Germany.

Articles Accepted for Publication
Gandhi M, Tang YM, Panizza B. Myxoma of the masticator space. Australasian Radiology
Leggett DAC, Sinnott SJ, Kienzle HN. Pseudoaneuerysm and DVT complicating Femoral Osteochondroma: Modularity imaging. Australasian Radiology
Ong B. Retrospective study of PICC line thrombosis. Australasian Radiology

Published Abstracts
Crowe B., Sim L. Productivity and PACS – Fact or Fiction, 2005 RANZCR Annual Scientific Meeting
Du L, Chan J, Stuckey SL. Validation of multi-detector computed tomography in the quantitative assessment of cardiac left atrial size: a comparison to echocardiography. 2005 RANZCR 56th Annual Scientific meeting.


**Lectures and Presentation**

**Dr David Leggett**

Vascular supply of Hepatocellular carcinoma: a basis for radiological diagnosis and therapy.

AGW 2005, Gastroenterological Society of Australia, Brisbane Convention and Exhibition Centre, South Brisbane.

Interventional radiology and Hepatocellular carcinoma.

Royal Australasian and New Zealand College of Radiologists ASM 2005, Sheraton Hotel, Noosa.

Vascular anatomy: Aneurysm management – Early post-op care; and Follow up protocols. First Brisbane Neurointerventional Conference, Education Centre, Royal Brisbane Womens Hospital.

**Dr Lawrence Sim**

Workflow before and after picture archive and communications system;


Picture archive and communications system and the Electronic medical record;


Monitors: Options and Impact on Radiological Diagnosis;


**Awards**


**Public Service Relevant to Research**

Associate Professor Stephen Stuckey

Reviewer for Australasian Radiology.
Professor William B. Coman, Head & Neck Unit Princess Alexandra Hospital, and his team have been actively engaged in frontier research in preoperative prognostic markers for head and neck and skin cancers. The group has published eleven papers in peer review journals in 2005. With a paper published in International Journal of Cancer featured in the front cover with editorial reviews.

The group is the first to identify Crystalline A & B as sensitive marker for poor prognosis in head and neck cancer.

Current Research Activities

Clinical Trials
Surgical Trial: Quality of Life, cost effectiveness, and functional speech and swallowing outcomes, following differential management of laryngeal cancer.
Chief Investigator: Professor W.B.Coman

Ongoing Laboratory Research
Establishing Head and Neck Squamous Cell Carcinoma cell lines with knock out Crystalline A & B gene
Translating findings in Head and Neck prognostic marker to skin cancers: Squamous Cell Carcinoma and melanoma.
Establishing tissue array technique for head and neck squamous cell carcinoma molecular profiling.

Dr. David Hall Ear Nose and Throat trainee PhD thesis on further validation and identifying preoperative prognostic marker in head and neck squamous cell carcinoma with Dr. David Chin

Epstein Barr Virus in developing vaccine for nasopharyngeal carcinoma.
PhD thesis for Ear Nose and Throat trainee, Dr. Mark Smith and Professor Denis Moss, Epstein Barr Virus laboratory, Queensland Institute of Medical Research.

Karin Annetz Ear Nose and Throat surgeon, Lund University, Visiting Swedish Ear Nose and Throat surgeon and PhD candidate validating prognostic marker.
Financial Support
$90,000. Garentt Passe and Rodney Williams Memorial Foundation Project. Quality of Life, cost effectiveness, and functional speech outcome, following differential management of laryngeal cancer. (Professor W Coman)
$60,000. Garentt Passe and Rodney Williams Memorial Foundation Project. Validation of novel prognostic markers in Head and Neck Cancer. (Professor W Coman)

Publications

Journal Articles


Articles Accepted for Publication


Published Abstracts
ANZ Journal of Surgery ASC Perth 2005; Molecular introduction to Head and Neck Cancer (HNSSC) carcinogenesis. David Chin, Glen Boyle, David Theile, Peter G. Parsons, William B. Coman. Institution: Head & Neck Unit, Princess Alexandra Hospital and Dept of Plastic Surgery, Princess Alexandra Hospital and Melanoma Genomics Group, Queensland Institute of Medical Research

ANZ Journal of Surgery ASC Perth 2005; Novel preoperative prognostic markers for poor prognosis in Head and Neck Cancer. David Chin, Glen Boyle, David Theile, Peter G. Parsons, William B. Coman. Institution: Head & Neck Unit, Princess Alexandra Hospital and Dept of Plastic Surgery, Princess Alexandra Hospital and Melanoma Genomics Group, Queensland Institute of Medical Research

ANZ Journal of Surgery ASC Perth 2005; Microarrays and gene expression profiling, the power, limitations and pitfalls for the surgeon. David Chin, Glen Boyle, David Theile, Peter G. Parsons, William B. Coman.

Institution: Head & Neck Unit, Princess Alexandra Hospital and Dept of Plastic Surgery, Princess Alexandra Hospital and Melanoma Genomics Group, Queensland Institute of Medical Research.

Book Chapters
Head and Neck Cancer. 2005: By Professor Coman for Professor Nick Saunders.

Lectures and Presentations
Professor William Coman
Course Director - Chairman-Head and Neck Cases – Total Glossectomy. Upover Downunder II Internation Ear Nose and Throat Meeting. Campitello, Italy January 2005.
Guest Speaker - Treatment of Advance Cancer of the Larynx in Developing Countries – Molecular biology of laryngeal cancer. XVIII International Federation of Surgeons World Congress Rome, Italy, June 2005.
Guest Speaker – Treatment of Laryngeal Cancer. Voice Symposium, Sydney 2005
Chairman – Thyroid Cancer Symposium. Hyatt, Coolum Queensland, November 2005

Post Graduate Students
David Hall, PhD, commenced 2005
Mark Smith, PhD, in progress

Awards
Dr David Chin
The Department is a designated level 6-Trauma centre with 42,000 annual attendances and 14,000 admissions. It is an acute clinical department with responsibility for Emergency Department presentations, Observation Bay admissions, and attendance at cardiac arrests occurring within the hospital environs.

Department research is hampered by lack of funding for trained and dedicated research assistants, and a heavy service commitment which impacts on Consultants and Registrars non-clinical time.

**Current Research Activities**

**Other Research**

**Trauma Registry**

Mathematical modelling of flows in Emergency Department – James Collier, Michael Sinnott and Prof Erhan Kozan from Queensland University of Technology

**Patents**

Dr Sinnott is involved (privately) with commercialisation of Intellectual Property developed by Qlicksmart and other third parties, including:

- Qlicksmart Scalpel Blade Remover,
- Qlicksmart Single-use Sterile Scalpel blade remover,
- Bladeserver Passing Tray (UK company),
- Check-Clip device for reducing medication errors (Gold Coast Paramedics),
- Syringe Aspiration Device (Brisbane Maxillary Facial Surgical Trainee),
- Syringe Aspiration Pen (Dr Neville Henry).

**Publications**

**Journal Articles**


**Lectures and Presentations**


‘Management of Medical Emergencies in Rural and Remote Context.’ Presentation to Australian College of Rural and Remote Medicine Orientation to Rural and Remote Medicine Workshop, Brisbane Convention Centre, Saturday 23rd April 2005.

**Staff**

Dr Phillip Kay, Director, MBBS, FRACGP, Dip RACGP, FACEM
Dr Peter Thomas, Deputy Director, Principal Clinical Coordinator Southern Zone, MBBS, FRCSI (Edin), FRACGP, FACRRM.
Dr Michael Sinnott, MBBS, FACEM, FRACP
Dr Colin Page, MB, ChB, FACEM
Dr Bevan Lowe, MB,ChB, Dip Obstetrics, Dip Sport Med (CAN), FNZCGP, FACEM
Dr James Collier, MBBS, FACEM
Julie Finucane OAM, FRCNA, NUM,
Kay Ahern CNC/Educator

**Permanent Part Time**

Dr Roy Mulcahy, MB ChB, DA (Lond), FRCSI, FACEM
Dr Marianne Cannon, MBBS, FACEM
Dr Andrew Parkin, MB, ChB, FACEM
Dr Andrew Staib MBBS, FACEM
Dr Sean Lawrence MBBS, FACEM

**Research Assistant**

David McNaughton, CNC, Trauma Registry (Part-Time)
Allen Murphy, CNC, Trauma Registry (Part-Time)
“Retrieval Medicine.” Presentation to the Department of Anaesthesia Staff Group, Royal Brisbane and Women’s Hospital, Wednesday 13th July 2005.

“Emergencies in Medicine.” Presentation to the Australian Podiatry Association (Qld) Inc. continuing education seminar, Saturday 23rd July 2005.

Michael Sinnott
“Commercial Success for the Smart State’s Biotechnology and Medical Device Industries is Hiding Right Below our Noses” Presenter at 5th Annual Medical Research Conference of Queensland. 2-11-05
Panellist of the “New Inventors” section of the 5th Annual Medical Research Conference of Queensland Sinnott, M 3rd of November 2005
“Commercialisation: Myths and Misconceptions.” Presenter at Science Industry Australia’s Pathways to Success Seminar, in Brisbane, 3rd of October 2005

“Product Realisation Working Group – Medical Device Innovation Action Agenda.” Invited member of Federal Government Think Tank 2005


Hector Fuentes

Julie Finucane

J Ward
The Department of Gastroenterology and Hepatology had a productive research year. The Liver Group within the Centre for Diabetes and Endocrine Research has been consolidating. In conjunction with Dr Ingrid Hickman, Post-Doctoral Research Fellow in the Liver Group, a research program examining liver disease in relation to type II diabetes has commenced. Some grant funding has been secured for 2006 to employ research staff to assist with this project. Studies of the role of adiponectin in human disease are ongoing, with a number of publications arising. Further project grant funding has been secured from the National Health and Medical Research Council to continue studies into the biology of adiponectin. The Liver Group have also established collaborations with the School of Human Movement at the Queensland University of Technology to examine the effect of different types of exercise on liver injury. The other new area of research is related to outcomes in liver transplant recipients, focusing on long term metabolic complications. Associate Professor Macdonald has secured a Princess Alexandra Hospital Foundation new Investigator Grant for 2006 for this project.

The laboratory of Associate Professor Darrell Crawford, Dr Linda Fletcher and Dr Kim Bridle has amalgamated with the Liver Group, to form a larger group with complimentary interests in the pathogenesis of liver disease and the role of host and environmental factors in disease progression. Interest in the inherited iron overload disease haemochomatosis continued with specific focus on the non-HFE mutations and the interrelationships between iron and alcohol in liver disease. Together with collaborators at Queensland Institute of Medical Research, they were the first to describe a ferroportin mutation in an Australian family leading to non-HFE related iron overload disease. Stressing the importance of the effect of alcohol on iron metabolism, it was demonstrated that alcohol downregulated the iron sensor peptide hepcidin, in an animal model of alcoholic liver injury, and this is currently in press in the alcohol literature. In 2005, with National Health and Medical Research Council funding, a project examining the effect of immunosuppression on the post-transplant hepatic response was initiated. Collaborations with Professor Mike Roberts and his group continued, with experiments describing the hepatic pharmacokinetics of propanol in an animal model of arthritis accepted for publication. This successful collaboration has attracted further National Health and Medical Research Council funding for 2006-2008.
Current Research Activities

Clinical Trials

PEG-Intron™ Plus REBETOL® For the Treatment of Subjects With Chronic Hepatitis C Who Failed to Respond to Previous Combination Therapy (Any α Interferon Treatment In Combination With Ribavirin).

PEG-Intron™ as Maintenance Therapy vs. an Untreated Control Group in Adult Subjects With Compensated Cirrhosis (METAVIR F4), Secondary to Chronic Hepatitis C, Who Have Failed to Respond to Therapy With Any α Interferon Plus Ribavirin.

PEG-Intron™ Maintenance Therapy vs. an Untreated Control Group for Prevention of Progression of Fibrosis in Adult Subjects with Chronic Hepatitis C with Hepatic Fibrosis (METAVIR Fibrosis Score of F2 or F3), Who Failed Therapy with PEG-Intron Plus REBETOL® (in Protocol No.P02370).

Randomized, Multicenter, Open Label, Phase IV Study Evaluating the Efficacy and Safety of 16-Week Versus 24-Week Treatment with PEGASYS® in Combination with Copegus® in Interferon-naïve Patients with Chronic Hepatitis C Genotype 2 or 3 Virus Infection.

A Randomized, Double Blind Trial of Ldt (Telbivudine) versus Lamivudine in Adults with Compensated Chronic HepatitisB.

Randomized, Double-Blind Trial of Telbivudine (LdT) versus Lamivudine in Adults with Decompensated Chronic Hepatitis B and Evidence of Cirrhosis.

NV-02B-022 Idenix 2005/071. An Open-Label Trial of Telbividine (LdT) in adults with Chronic Hepatitis B previously treated in Idenix-sponsored Telbividine studies.

A randomized, open label trial of Telbividine (LdT) versus Adefovir Dipivoxil in adults with HBeAg-positive, Compensated Chronic Hepatitis B.

An extension protocol to evaluate the long-term effects of treatment with peginterferon alfa-2a (PEG-IFN) - or interferon (IFN) - based therapies for patients with chronic hepatitisC.

A Double-Blind, Randomised, Placebo-Controlled Study of Adefovir Dipivoxil for the Treatment of Patients with HbeAg (+) Chronic Hepatitis B Virus Infection.

Gilead A phase 3b, long-term, observational study of the durability of seroconversion in patients with chronic hepatitis virus infection who have seroconverted while participating in a previous Gilead-Sponsored study of Adefovir Dipivoxil.

A prospective non-randomised dual arm longitudinal cohort within which all subjects will be given the option of undergoing treatment involving a 24 week course of pegylated interferon monotherapy (180 mcg / weekly at entry to study.

Phase IV study of tailored therapy with Peg Interferon alpha 2b and Ribavirin for patients with Genotype 3 and high viral load. Genotype 3 Extended Treatments for HCV.

Hepatitis C in South East Asians: The association between novel genotypes and response to Pegylated-Interferon and Ribavirin therapy.

A phase IV, Randomised, Multicentre, Efficacy and Safety Study Examining the Effect of Induction Dosing with the Combination of Peginterferon Alfa-2a and Ribavirin in Patients with Chronic Hepatitis C Infected with Hepatitis C Genotype 1.

Collaborators

Professor John Prins
(Centre for Diabetes and Endocrine Research, The University of Queensland)

Dr Jon Whitehead
(Centre for Diabetes and Endocrine Research, The University of Queensland)

Professor Michael Roberts
(Department of Medicine, The University of Queensland)

Emeritus Professor Lawrie Powell
(Department of Medicine, The University of Queensland/ Queensland Institute of Medical Research)

Associate Professor Greg Anderson
(Queensland Institute of Medical Research)

Associate Professor Grant Ramm
(Queensland Institute of Medical Research)

Dr Nathan Subramaniam
(Queensland Institute of Medical Research)

Dr David Whiteman
(Queensland Institute of Medical Research)

Associate Professor Michael Dunne
(School of Public Health, Queensland University of Technology)
A phase III, Randomised, Multicenter, Efficacy and Safety Study Examining the Efficacy of the Combination of Peginterferon alfa-2a and Ribavirin versus Peginterferon alfa-2a monotherapy in liver transplant recipients with Recurrent Hepatitis C Virus Infection.

A Phase 2b, Randomized, Multicentre, Active controlled Open Label Study to Evaluate the Efficacy and Safety of Albuferon in Combination with Ribavirin in Interferon Alfa Naïve Subjects with Chronic Hepatitis C Genotype 1.

A Randomised, Double-blind, Controlled Evaluation of Tenofovir DF versus Adefovir Dipivoxil for the Treatment of Presumed Pre-core Mutant Chronic Hepatitis B.

A Randomised, Double-blind, Controlled Evaluation of Tenofovir DF versus Adefovir Dipivoxil for the Treatment of HBeAg Positive Chronic Hepatitis B.

Other Research

The regulation of hepatic insulin signalling and action.
The role of iron in hepatic insulin resistance.
The regulation of Adiponectin multimerisation and secretion.
The structure and function of the adiponectin receptors, AdipoR1 and AdipoR2.
The role of adiponectin multimers in human disease.
Symptoms in people living with hepatitis C infection.
Liver disease in type 2 diabetes.
The effect of aerobic versus resistance exercise on human liver disease.
Factors that influence the development of renal failure in liver transplant recipients.
Long term metabolic complications following liver transplantation.
Interrelationships between alcohol and liver disease.
Immunosuppression and the post-transplant hepatic fibrogenic response.
Non-HFE related iron overload.
Screening for the iron-overload disease, haemochromatosis.
Altered hepatic pharmacokinetics and hepatic vascularity in liver disease.

Publications

Journal Articles


Financial Support

Current NHMRC Grants
$70,000. NHMRC. Human Hepatic Insulin resistance. (GA McDonald)
$145,000. NHMRC. Effect of liver pathophysiology on hepatic pharmacokinetics. (Ms Roberts, DHG Crawford.)
$94,750. NHMRC. Effect of liver pathophysiology on hepatic pharmacokinetics. (DHG Crawford, K Bridle, LM Fletcher.)

Other Support

$10,000. Princess Alexandra Hospital Foundation. The relationship between serum adiponectin and inflammatory state in obese adults. (GA Macdonald)
$90,000. UQ Mayne Bequest Fund. A research program in the metabolic syndrome. (JB Prins)
The Haematology Department serves as a tertiary level referral centre and is the "hub" for the Southern Zone of Queensland covering a population of more than 1.5 million. The Unit provides state-of-art clinical care encompassing chemotherapy, stem cell transplantation and immunotherapy. Patient care is based on the multidisciplinary team model in which groups of experts combine their skill and experience to manage patients with blood disorders. The Princess Alexandra Hospital Haematology Unit includes nationally recognised experts who conduct an extensive clinical research programme in leukaemias, lymphomas, myelomas and amyloidosis. The overall mission is to improve patient outcomes through the generation of high quality clinical trial data. The large clinical trials program incorporates 23 ongoing trials (14 in Lymphoma, 6 in leukaemia including 2 national investigators initiated trials and 2 international trials with Australasian principal investigator based at Princess Alexandra Hospital). The unit is recognized as a leading contributor to studies conducted through the Australasian Lymphoma and Leukaemia Group and others groups. The Unit has been instrumental in fostering translational research to be conducted in association with national clinical trials. As well as the research program at the hospital, the Unit nurtures and supports a wide range of laboratory based research through the development of the National Leukaemia and Lymphoma Tissue Bank housed at the hospital. This includes immunotherapy and DNA microarrays in leukaemias and lymphomas.

Significant growth resulted in Clinical and Translational research activity. The number of publications has more than tripled in the last 2 years. The highlights in the Laboratory Program includes ongoing recognition as the Acute Myeloid Leukaemia reference centre for detection of minimal residual disease in core binding factor acute myeloid leukaemia, development of wt-1 assay for minimal residual disease in non-core binding factor acute myeloid leukemia. In addition, funding has been secured for a Queensland Cancer Foundation Clinical Fellowship, new investigator initiated national trials (AML M13), Amyloidosis, and cell therapy. in Haematology Department and also from National Health and Medical Research Council Enabling grant for Australasian Leukaemia & Lymphoma Group tissue bank.

Current Research Activities

Large scale assessment of WT1 as a marker of MRD in patients with acute myeloid leukaemia treated uniformly in a clinical trial.

Quantitative Molecular assessment of Minimal Residual Disease in core binding factor, AML in conjunction with ALLG AML-M13 Clinical Trial.

Fluorogenic High Resolution Fragment Analysis of IgH and TCR Gene Rearrangements
Prognostic value of ZAP-70 in chronic lymphocytic leukaemia.
Comparison of commercially available RNA extraction and stabilisation solutions.
DNA microarrays in predicting clinical outcomes in chronic lymphocytic leukaemia
Role of PKR in chronic lymphocytic leukaemia
Tumour stem cells in chronic lymphocytic leukaemia

Clinical Trials

Investigator initiated studies designed and authored from The Princess Alexandra Hospital.

AML M13: High dose cytosine arabinoside and fludarabine without anthracyline for core binding factor (CBF) acute myeloid leukaemia (AML). National multi-centre Phase II study. (Principal investigator: P. Marlton)

NHL 11: A Phase II study of a modified HyperCVAD frontline therapy for patients with poor prognosis diffuse large B-cell lymphoma and peripheral T-cell non-Hodgkin's lymphoma. (Principal investigator: P. Marlton)

MM8: A Phase II Study of Risk-Adapted IV Melphalan in AL Amyloidosis. (Principal Investigator: P. Mollee)

Multi-centre Trials The Princess Alexandra Hospital is Participating in:

International

PRIMA: A multicentre, phase III, open-label, randomized study in patients with advanced follicular lymphoma evaluating the benefit of maintenance therapy with Rituximab (MabThera®) after induction of response with chemotherapy plus Rituximab in comparison with no maintenance therapy. (Site PI: P. Marlton)

OCRELIZUMAB: (Site Principal Investigator: P. Marlton)

VISTA: An open-label, randomized study of VELCADE/Melphalan/Prednisone versus Melphalan/Prednisone in subjects with previously untreated Multiple Myeloma. (Site Principal Investigator: P. Marlton)

CLL8: Phase III trial of combined immunochemotherapy with Fludarabine, Cyclophosphamide and Rituximab (FC-R) versus chemotherapy with Fludarabine and Cyclophosphamide (FC) alone in patients with previously untreated chronic lymphocytic leukaemia (Site Principal Investigator: P. Marlton)

PTLD1: Treatment of Patients with Post-transplant lymphoproliferative disorder (PTLD) with a sequential treatment consisting of Anti-CD20 Antibody Rituximab and CHOP + GCSF chemotherapy (Site Principal Investigator: P. Mollee)

National

AML M12: A Randomised Trial of Idarubicin Dose Escalation in Consolidation Therapy Following Intensive Induction Chemotherapy Incorporating High Dose Cytarabine in Patients with Untreated Adult Acute Myeloid Leukaemia. (Site Principal Investigator: P. Marlton)

ALL3. Site Principal Investigator: P. Marlton
LY03: A Randomised Trial of Chlorambucil Versus Fludarabine as Initial Therapy of Waldenstrom’s Macroglobulinaemia and Splenic Lymphoma with Villous Lymphocytes (Site Principal Investigator: P. Marlton)

Other Research

Australasian Leukaemia and Lymphoma Group National Leukaemia and Lymphoma Tissue Bank Project

The group has established Australia’s first national tissue bank for malignant haematopoietic tissues collected in conjunction with Australasian Leukaemia and Lymphoma Group national clinical trials for the purposes of supporting laboratory based research. With initial seed funding from the Leukaemia Foundation, this project is now funded by the National Health and Medical Research Council.

Investigation of in vitro activity of Valproic acid (VA) and low dose cytosine arabinoside (Ara-C) in Acute Myeloid Leukaemia

Aggressive cutaneous squamous cell carcinoma in chronic lymphocytic leukaemia

Chronic lymphocytic leukaemia (CLL) Stem Cells

Defining the effect of anti-CD20 antibody therapy in non-Hodgkin’s lymphoma patients on the Epstein-Barr virus-specific cytotoxic T cell response and Epstein-Barr virus DNA load

Efficacy of in vivo G-CSF primed viral-peptide

Specific T cells

Effect of the “Hyper-CVAD” chemotherapy regimen on female fertility

Safety and efficacy of pegfilgrastim compared to granulocyte colony stimulating factor (G-CSF) supporting a dose-intensive, rapidly cycling antimetabolite containing chemotherapy regimen (Hyper-CVAD) for lymphoid malignancy

Increased lipid concentration is associated with increased level of haemolysis

Effects of hyperlipidaemia on plasma sodium, potassium and chloride measurements by an indirect ion selective electrodes (ISE) measuring system

LAG-3 and Follicular Lymphoma

Palifermin induced acanthosis nigricans

Can immunosuppression be safely ceased during chemotherapy for post-transplant lymphoproliferative disorder in renal transplant patients?

Assessment of a New Immunoturbidometric Assay of Von Willebrands Factor Activity
Financial Support
Total Amount of funding from Pharmaceutical Industry for Clinical Trials in 2005 was $206,957.02 in addition to the following:

Grants
$50,000. Leukaemia Foundation of Australia. Molecular assessment of good prognosis AML in conjunction with ALLG-AML-M13 trial. (P Marlton)

$280,000 over 5 years. Leukaemia Foundation of Australia. Molecular assessment of good prognosis AML in conjunction with ALLG-AML-M13 trial. (P Marlton)

$20,000 Cancer Council Australia. Molecular assessment of good prognosis AML in conjunction with ALLG-AML-M13 trial. (P Marlton)

$5,800. QHPS SERTF. Fluorogenic High Resolution Fragment Analysis of IgH and TCR Gene Rearrangements. (R Saal)

$107,000. Leukaemia Foundation of Australia. ALLG National Leukaemia Lymphoma Tissue Bank. (P Marlton)

$5,000. Leukaemia Foundation of Australia. MM8. (P Mollee)

$5,000. Amgen. MM8. (P Mollee)

$5,000. Roche. PTL1D. (P Mollee)

$20,000. Amgen. Pegfilgrastim in HyperCVAD. (P Mollee)

Other
$300,000. ALLG National Leukaemia Lymphoma Tissue Bank. (P Marlton)

Publications
Journal Articles


Lane SW, Gill D, Mollee PN. Role of VAD in the initial treatment of multiple myeloma. Blood.


Published Abstracts

Hall S, Tate J, Gill D, Mollee P. Significance of Abnormal Protein Bands in Patients with Multiple Myeloma Following Stem Cell Transplantation. Dept of Chemical Pathology and Haematology, QHPS, Princess Alexandra Hospital, Brisbane. 10th International Myeloma Workshop, Sydney (poster)


Lane S, Mollee P, Bird R, Porceddu S, Gill D Aggressive cutaneous squamous cell carcinoma in chronic lymphocytic leukaemia. Princess Alexandra Hospital Annual Scientific Meeting of the Haematology Society of Australia and New Zealand (poster)

Middleton H, Mollee P, Bird R, Mills A, Marlon P. Gill D. Accelerated Delivery of Rituximab is Safe on an Out-Patient Basis. Princess Alexandra Hospital, Brisbane, Queensland, Australia Annual Scientific Meeting of the Haematology Society of Australia and New Zealand (oral presentation)

Mollee P, Marlon P, Mills A, Bird R, Gill D. Unexpected Haematologic Toxicity Associated with the Use of Intravenous Intermediate Dose Melphalan and Dexamethasone in Patients with Cardiac AL Amyloidosis. Dept of Haematology, Princess Alexandra Hospital, Brisbane, 10th International Myeloma Workshop, Sydney (poster)

Mollee P, Tate J, Dimesti G, Gill D. Falsey Low Serum Free Light Chain Concentration in Patients with Monoclonal Light Chain Diseases.


Tate J, Mollee P, Gill D. Utility of Serum Free Light Chains for Monitoring Myeloma Post-Autologous Stem Cell Transplantation. Dept of Chemical Pathology and Haematology, QHPH, Princess Alexandra Hospital, Brisbane. 10th International Myeloma Workshop, Sydney (poster).

**Book Chapters**


**Lectures and Presentations**

**Dr Devinder Gill**

- Aggressive lymphomas. Indo-Australian Update October 2005, Bangalore, India
- Acute myeloid leukaemia. Indo-Australian Update October 2005, Bangalore, India
- Overview of BMT in Haematological Malignancies. Indo-Australian Update October 2005, Bangalore, India
- Interim analysis of Multicentre International Trial in Aggressive Lymphoma: Australasian Leukemia Lymphoma Group Meeting. Adelaide 2005
- Salvage chemotherapy R-ICE vs R-DHAP in relapsed Diffuse Large B-Cell Non-Hodgkin’s Lymphoma (CORAL Study) Adelaide 2005
- Gene expression profiling in B-CLL. Australasian Leukemia Lymphoma Group Meeting. Adelaide 2005
- Advances in Leukemia. The Princess Alexandra Hospital Centre for Health Research Translational Research Symposium – tomorrow’s therapies today August 2005

**Dr Russell J Saal**

- Minimal Residual Disease in Acute Leukaemia: Princess Alexandra Hospital data:

**Public Service Relevant to Research**

**Dr Devinder Gill**

- Executive Member of Australasian Leukaemia & Lymphoma Group (ALLG)
- Chair of Aggressive Lymphoma & Hodgkin’s Lymphoma Group (Clinical Trials - ALLG)
- Founding Member of Australasian Chronic Lymphocytic Leukemia Research Group
- Member of Medical Advisory Committee Leukaemia Foundation of Qld
- Member of the Princess Alexandra Hospital Research Committee
- Research Fellow, Centre for Immunology and Cancer Research, Princess Alexandra

**Dr Paula Marlton**

- Review Leukaemia and Lymphoma

**Dr Peter Mollee**

- Councillor for Qld on the Haematology Society of Australia and New Zealand
- Member of the subcommittee for Aggressive Lymphoma & Hodgkin’s Disease
- Member of the subcommittee for Indolent Lymphoma/ Chronic Lymphocytic Leukemia/Myeloma
The Princess Alexandra Hospital Hypertension Unit conducts internationally recognised clinical research into the pathogenesis and management of hypertension, and especially of endocrine forms. The Unit is considered a world authority on primary aldosteronism, a specifically treatable and potentially curable form of hypertension, and has made major contributions to the understanding of its pathogenesis (including genetic basis), prevalence and accurate diagnostic workup. This has led to frequent invitations to speak at national and international meetings, contribute reviews to major journals and collaborate with national and international research groups in areas relating to aldosterone, primary aldosteronism and other salt-dependent forms of hypertension.

Major research highlights and achievements by the Princess Alexandra Hospital Hypertension Unit during 2005 included:

- The appointment as Research Assistants to the Unit of a new scientist (Ms Livia Kelemen) who is highly experienced in molecular biology techniques.
- The strengthening of its research collaboration into the genetics of primary aldosteronism with Dr David Duffy and the commencement of collaborative research with Dr Grant Montgomery, both from the Queensland Institute of Medical Research.
- Ongoing Project Grant funding from the National Health and Medical Research Council to conduct further research into the Genetics of primary aldosteronism.
- Significant progress in the Unit’s quest to elucidate the genetic basis of primary aldosteronism: Previous work performed by the Greenslopes Hospital Hypertension Unit (of which the Director of Princess Alexandra Hospital Hypertension Unit is also a senior member and was Director in 2005) involving one large family with primary aldosteronism identified a region within the family members’ DNA which probably contains the abnormal gene. Recent work performed at Princess Alexandra Hospital Hypertension Unit as part of Dr Albertina So’s PhD thesis found evidence to suggest that the same region of DNA may also be involved in two other affected families, and by studying the original large family in more detail, has been able to significantly shorten the region of DNA that must be searched to find the abnormal gene, allowing around one-half of the genes contained in this area to be ruled out as causing primary aldosteronism. Ongoing work has been centering around refining this region further using single nucleotide polymorphism analysis in order to gradually home in on the responsible gene and direct sequencing of candidate genes in this region. This work has the potential to lead to new tests that will make it much easier to detect people with this condition, so that they can then be given specific and often curative treatment. It will also increase understanding as to how primary aldosteronism develops in the first place.
New findings on the adverse cardiovascular effects of aldosterone excess: Recent evidence, mainly from animal studies, suggests that too much aldosterone can harm the heart and arteries directly, through means that don’t necessarily involve high blood pressure. The Princess Alexandra Hospital Hypertension Unit, in collaboration with Professor Tom Marwick’s Cardiovascular Imaging Research Group as part of the Clinical Centre of Research Excellence in Cardiovascular Disease and Metabolic Disorders at Princess Alexandra Hospital, is studying whether this is the case in humans. In 2003, the Unit found that people with hypertension due to primary aldosteronism had abnormal heart function, the severity of which related directly to the serum level of aldosterone hormone (and not just to severity of hypertension). Work in 2004-5 demonstrated evidence of reduced heart function in patients with an inherited form of primary aldosteronism who hadn’t yet developed hypertension. These findings are of major importance as they raise an argument for giving “anti-aldosterone” treatment to people whose adrenals produce too much aldosterone, whether or not they have high blood pressure. Ongoing work is focusing on the effects of such treatment in people with primary aldosteronism.

A major research grant was awarded to the Princess Alexandra Hospital Hypertension Unit by the Golden Casket Foundation.

The Princess Alexandra Hospital Hypertension Unit received additional funding to allow the appointment of a second Hypertension Nurse, which has permitted greater nurse involvement in the Unit’s clinical research activities, and a Hypertension Unit Registrar, who will also participate in Princess Alexandra Hospital Hypertension Unit research.

Current Research Activities

Other Research

Associate Professor Stowasser has sixteen years of clinical and research experience in the pathogenesis, diagnostic workup and management of various forms of hypertension and especially of endocrine varieties, including primary aldosteronism, renovascular hypertension, pheochromocytoma, renin-secreting tumors, and the syndrome of hypertension and hyperkalemia with normal glomerular filtration rate, also known as pseudo-hypoaldosteronism type 2 (PHA-2) or Gordon's syndrome. The Princess Alexandra Hospital Hypertension Unit is the only clinical Unit within the Queensland public sector dedicated to the management of, and research into hypertension. Main recent topics of publication and presentation have included:-

- Epidemiological, clinical, biochemical, morphological and genetic aspects of primary aldosteronism. Using meticulous new diagnostic approaches, the Greenslopes Hospital Hypertension Unit was first to demonstrate worldwide that primary aldosteronism is approximately 10 times more common than previously thought. The combined Princess Alexandra Hospital Hypertension Unit / Greenslopes Hospital Hypertension Unit have the largest number of patients (currently over 1200) with primary aldosteronism worldwide who have been thoroughly studied and documented. This provides a unique resource for further research into the causes, diagnosis and treatment of mineralocorticoid hypertension. The Princess Alexandra Hospital Hypertension Unit is the only facility in Eastern Australia offering genetic testing for a familial variety (FH-I) which can cause severe hypertension and early death from stroke, but which is easily controlled by giving small doses of specific “glucocorticoid” medication.
Genetic forms (i) FH-I: clinical, biochemical and genetic approaches to detection, various aspects of aldosterone biosynthesis, determinants of hypertension severity, treatment, and seeking evidence of non-blood pressure related adverse cardiovascular effects of aldosterone excess in normotensive subjects with FH-I.

Genetic forms (ii) the Princess Alexandra Hospital Hypertension Unit is involved in collaborative research with the Queensland Institute of Medical Research, the National Institutes of Health, Bethesda and the Mount Sinai School of Medicine, New York, USA in order to determine genetic mutations responsible for a new familial variety of primary aldosteronism (FH-II) described by the Greenslopes Hospital Hypertension Unit in 1991.

Non-BP dependent adverse cardiovascular effects of aldosterone excess, which are being sought in patients with primary aldosteronism and other forms of hypertension by measuring procollagen propeptides as a marker of cardiovascular fibrosis, pulse wave velocity as an indicator of arterial stiffness, and using state-of-the-art echocardiographic techniques (performed in Professor Thomas Marwick’s laboratory, University of Queensland Department of Medicine, Princess Alexandra Hospital) to study function, fibrosis and remodelling of the heart.

The therapeutic potential of aldosterone antagonists in a variety of clinical situations (including hypertension and diastolic heart failure).

The genetic basis of fibromuscular dysplasia of the renal arteries, which causes a renovascular form of hypertension.

The detailed pathophysiology and genetic basis of Gordon’s syndrome.

The diagnosis of renin-secreting tumors.

Pathogenesis and diagnosis of pheochromocytoma, a tumor that secretes catecholamines (including adrenaline and noradrenaline), leading to extremely dangerous hypertension and cardiac arrhythmias.

Publications

Journal Articles


Published Abstracts


Book Chapters

Articles accepted for Publication

Lectures and Presentations

Invited - international

Invited - national
Competitive by abstract submission - oral presentations

Competitive by abstract submission - poster presentations

So A, Jeske J, Gordon R, Duffy D, Bulmer B, Stowasser M. Further Evidence of linkage at 7p22 with familial hyperaldosteronism type II (FH-II) and examination of the RBaK coding regions. 27th Scientific Meeting of the High Blood Pressure Research Council of Australia, Melbourne, December 2005.

Post Graduate Students
Albertina So, PhD, in progress

Award
Honorary Professor to the Xinjiang Institute of Hypertension

Public Service Relevant to Research
Associate Professor Michael Stowasser
Member, Blood Pressure and Vascular Disease Advisory Committee for the National Heart Foundation of Australia (1998 - )
Member, Editorial Board for Clinical and Experimental Physiology and Pharmacology (1998 - )
President, Queensland Hypertension Association (1995 - )
Reviewer, National Heart Foundation of Australia Clinical Research Scholarship applications
Member, Grant Review Panel, National Health and Medical Research Council
Reviewer of Scientific Papers submitted for publication in the following journals: Journal of Clinical Endocrinology and Metabolism, American Journal of Hypertension, Human Genetics, Journal of Hypertension, Journal of Human Hypertension, Clinical Endocrinology
Invited to visit the Xinjiang Institute of Hypertension to help them establish clinical protocols for the diagnostic workup and management of primary aldosteronism and was appointed Honorary Professor to the Institute in recognition of this assistance
The Infection Management Services is comprised of a series of divisions including Clinical Infectious Diseases, Infection Control, Sexual Health and the Alternate Site Infusion Service. Each division of the Department provides services to the entirety of the Southern Zone of Queensland Health, except the Gold Coast. The Department provides undergraduate and post-graduate teaching in all areas of Infectious Diseases, Infection Control as well as some Microbiology to Medical, Pharmacy and Science students of the University of Queensland. Post graduate education and activities are undertaken with a range of professional groups including Doctors, Nurses, Pharmacists and Laboratory Scientists.

The research program of the Department has three major foci:

- Epidemiology of healthcare associated infection including development of new epidemiological and statistical techniques for the early detection of adverse outcomes of an infective nature. There is particular interest in both community and hospital-acquired Methicillin-resistant Staphylococcus aureus and healthcare associated yeast and fungal infections. Antimicrobial resistance patterns, particularly in major hospital pathogens.
- Pharmacokinetics and pharmacodynamics of newer antimicrobial agents.

**Current Research Activities**

Development of statistical and epidemiological methods for the early detection of adverse infective event of healthcare related infection.

Epidemiology pathogenicity treatment and resistance development and community acquired Methicillin-resistant Staphylococcus aureus infections.

Statistical analysis and epidemiological assessment of fungal and yeast infections in the intensive care setting.

Mathematical modelling of multi-resistant organism transmission in healthcare institutes.

Pharmacoconomics of home intravenous therapy.

Behaviour in healthcare workers – needlestick injury and handwashing.

**Clinical Trials**

A Phase 3, Randomised, Double-Blind, Multinational Trial of Intravenous Televancin versus Vancomycin for Treatment of Complicated Gram-Positive Skin and Skin Structure Infections with a focus on Patients with Infections due to Methicillin-resistant Staphylococcus aureus.

The Australian Community-Acquired Pneumonia Study.

Publications

Journal Articles

Published Abstracts
Looke DFM. Strongyloides stercoralis hyperinfection syndrome. An Illustrative case presentation and brief exposition of current concepts in diagnosis and management. Strongyloidiasis Workshop, Australian Institute of Medical Science Scientific meeting. Yeppoon. June 2005
Munckhof WJ. Continuous infusion of ticarcillin-clavulanate for home treatment of serious infections: clinical efficacy, safety, pharmacokinetics and pharmacodynamics. Australasian Society for Infectious Diseases Annual Scientific Meeting, Busselton, Western Australia, April 2005.
Runneger N, Playford EG. Intradermal hepatitis B vaccination for healthcare workers who fail to respond to intramuscular vaccination. Annual Scientific Meeting of Australasian Society for Infectious Diseases, Busselton, April 2005.

Book Chapters

Articles accepted for Publication
Playford EG, Webster AC, Sorell TC, Craig JC. Antifungal agents for preventing fungal infections in solid organ transplant recipients. European Journal of Clinical Microbiology and Infectious Diseases (in press)


Post Graduate Students
Karen Taylor, Masters, in progress
Gail Neilson, PhD, in progress
Kanchanamala Ranasinghe, PhD, in progress
Brahmaputra Marjadi, PhD, in progress

Public Service Relevant to Research
Dr David Looke
Therapeutic Guidelines: Antibiotic — Member of Writing Group.
Pathology – Editorial Board.

Dr Michael Whitby
International Journal of Infectious Diseases — Editor for South East Asia and Australasia