Research Highlight: Migraine

The Genomics Research Centre, under the direction of Prof Lyn Griffiths, has been studying the genes involved in migraine for a number of years. These studies have mapped genes on chromosomes 19, X and 1 and also implicated several susceptibility genes. Of particular interest, recent studies have implicated a number of vascular and hormonal related genes. Two vascular related genes, MTHFR and ACE, have now been shown to be involved in susceptibility to migraine, but also two hormone related genes. This is the first time that hormone receptor genes have been associated with migraine. “We always knew that hormones were involved, now we know that there is a genetic basis,” Professor Griffiths said. “It seems so obvious now, but it’s a whole new area of discovery. This is the initial finding, now we need to look at the mutations to see how a change in the DNA sequence affects the gene. There is more than one gene involved in migraine and different variations affect people differently.” Professor Griffiths said women were three times more likely than men to suffer from migraine and they often experienced their first migraine at puberty. “Pregnancy and menopause can also play havoc with migraine, which shows further evidence that hormones such as oestrogen and progesterone are implicated,” she said. “There is also what we call a ‘menstrual migraine’ whereby migraine becomes linked to the menstrual cycle.” While an effective treatment for the condition has not yet been identified, an awareness of the genetic link in hormones could help migraine management, particularly during hormonal changes.

Migraine facts

- Migraine affects the nervous system of the body, causing nausea, vomiting and debilitating headaches
- As many of 12% of Australians suffer from migraine
- About 90% of migraine sufferers turn to painkillers to ease their pain, sometimes in excessive amounts
- At present, the accurate diagnosis of migraine is difficult and current drug treatments only seem to be effective in some patients
- Migraine tends to worsen in the 20s, but begins to ease in the 30s and 40s before almost dropping off completely in the 50s
- With 10 years of migraine research behind them, Professor Griffiths and her team at the Genomics Research Centre are one of the world leaders in the field.

The Genomics Research Centre is always seeking volunteer migraine sufferers to provide blood samples at its Southport clinic (opposite the Gold Coast Hospital) for its research purposes. Please contact Sharon Quinlan on 07 5509 7300 to find out how you can help the centre with its migraine research.
School of Medical Science

Head of School – Professor Lyn Griffiths
The School of Medical Science, formerly the School of Health Science was established in 1993 within the Faculty of Nursing and Health Sciences. Undergraduate studies within the school at that time offered new innovative courses in sport and exercise and encompassed courses in the biomedical sciences, psychology, social sciences and humanities to prospective students.

With the ever increasing demand in Australia and around the world for skills and knowledge of a broad range in the Health and Medical fields, the School has evolved into a key contributor and offers two very distinctive undergraduate programs; the Bachelor of Health Science and the Bachelor of Biomedical Science providing relevant background studies in health care in medical and para-medical practice involving the application of knowledge from a number of disciplines including biochemistry, physiology, pharmacology, genetics, molecular biology, bacteriology, immunology, virology, pathology, psychology as well as chemistry, physics, mathematics and the social sciences. Both programs are of three-year full-time duration designed to provide a balanced education in the biomedical sciences. In addition both Programs offer a one year full time or equivalent part time Honours program providing graduates with the opportunity to undertake advanced study and research within the health science/biomedical science fields. These Honours programs provide students with a thorough training in applied scientific research and methodology and also prepare students for higher degree studies and professional employment.

The School currently has a staff of fifteen academics with national and international reputations in biomedical research and is well known for its vision and dedication to excellence in both teaching and research.

The School hosts two well established Research Centres; the Genomics Research Centre and the Heart Foundation Research Centre and a number of excellent research groups including Microbiology and Infectious Diseases, Reproductive Biology and Biochemistry.

The School of Medical Science is headed by Professor Lyn Griffiths, who is also the Director of the Genomics Research Centre and supported by two administrative Staff – Sassy Braisby, the School Administrative Officer and Beccy Ruttley, the School Secretary.

Genomics Research Centre

Director – Professor Lyn Griffiths
The Genomics Research Centre, established at Griffith University in 1997 under the leadership of Professor Lyn Griffiths, undertakes molecular research aimed at identifying genes involved in disease, characterising gene structure and function, defining gene interactions, and developing diagnostic and therapeutic applications. Current studies are directed towards identifying genes involved in high blood pressure, migraine, cancer of various types, osteoporosis and multiple sclerosis. This research spans Population Genomics to Functional Genomics, with a strong emphasis on gene mapping, gene expression and gene characterisation, but also encompasses clinical and ethical issues associated with human genomics. Underpinning the research at the Centre is a need for good bioinformatic and statistical genetics skills and synergistic research collaborations with clinicians and medical researchers at local Gold Coast and Brisbane Hospitals, and other research centres including the Heart Foundation Research Centre and the Queensland Institute of Medical Research.

Research Projects
• The molecular genetic basis of migraine
• Multiple Sclerosis (MS) gene expression studies
• Identifying genetic risk factors for Cardiovascular Disease (CVD)
• Cancer Research - including breast, skin, prostate, lymphoma & colon cancers
• The pharmacogenetics of complex human disorders
• Kidney Disease, Hypertension (high blood pressure) & Incontinence
• Cell Growth and Injury Regeneration
• Genetic Diagnosis & Treatment

Team
The Centre has grown over several years to include several principal researchers including:
- Dr Steve Ralph, Deputy Director, undertakes research on immunogenetics, identifying target genes for vaccine development for various types of cancer.
- Dr Nigel Morrison, undertakes research on the genes involved in bone differentiation and osteoporosis and also on prostate cancer.
- Dr Rod Lea, a Bioinformatics and Statistical Genetics analyst who, as a Postdoctoral scientist within the Centre, undertakes genetic analysis of complex disease traits.
- Dr Dianne Moses, a medically trained clinician undertaking research within the Centre aimed at defining the genes involved in a unique renal and endocrine inherited disorder.
- Sharon Quinlan, senior research co-ordinator, supervises and coordinates research within the GRC clinic located opposite the Gold Coast Hospital.
- Dr David Maguire, undertakes mitochondrial and molecular diagnostic studies and who has for a number of years been a collaborator with the GRC.
- Dr Madelyn Peterson, heads the Genetic Counselling MSc course within Griffith University and brings expertise in Genethics and psychosocial issues relating to human genomics.
- Dr Anne McDonnell, undertakes research investigating the factors involved in cell growth and ways to overcome cell and tissue injury.
- Dr Lucia Pemble, has expertise in gene analysis in leukaemia and diagnostic techniques.
- Dr Gary Grant, is involved with pharmacogenetic research, investigating the relationship of genes to medication treatment and response.
- Dr Roselyn RoseMeyer, undertakes molecular and pharmacology research with an interest in ageing and incontinence.
- Dr Joanne Lewohl, investigates the genes involved in alcoholism using a microarray and proteomic approach.
- Dr Dean Pountney, is a new appointee undertaking research on Parkinson’s disease and dementia.
- Dr Alfreda Stadlin, also a new appointee will start in July, will undertake research on the genes involved in substance abuse.
## Staff Profiles

### Professor Stephanie Short
**Dean (Teaching and Learning), Head, School of Public Health**

Professor Stephanie Short worked as a physiotherapist in NSW and Queensland on completion of her Physiotherapy studies at the University of Sydney. She then returned to University study and graduated with first-class honours in Sociology from the University of New South Wales (UNSW) in 1983. In that year she was awarded the Sir John Gellibrand Memorial Scholarship to undertake studies towards a Master of Science in Sociology as Applied to Medicine at the University of London. Following this she undertook and completed a PhD in Sociology at UNSW, this time as the recipient of a Commonwealth Postgraduate Scholarship.

She has lectured at the Universities of Sydney, Newcastle, and Wollongong, and was Senior Lecturer in Health Care Sociology in the School of Public Health and Community Medicine at UNSW. Professor Short joined Griffith University as Professor and Head of the School of Public Health in 2003, and accepted her Dean (T&L) responsibilities in February 2005. Professor Short has supervised 8 PhD/MD theses to completion and has written over 60 papers in the scholarly literature, plus 6 scholarly books in the fields of health care sociology, health policy analysis and public health. She has served as elected President of the Public Health Association of Australia (NSW Branch, 1996-2000), as Scientific Convenor of the PHAA Annual Conference, 2001, and as a member and/or chair of 6 committees and working parties of the National Health & Medical Research Council. She is best known as the co-author of *Health Care and Public Policy*, now in its third edition; the core reference text in this field. Professor Short’s current research interests include health services evaluation and the social structure of choices and constraints in relation to health care insurance both in Australia and internationally.

### Dr Dean Pountney
**Lecturer (School of Medical Science)**

Dr. Pountney obtained a BSc with honours in Chemistry in London and a PhD from the School of Chemical Sciences, University of East Anglia, Norwich and has previously held research positions in Switzerland, the US and Adelaide. His research focuses are in molecular mechanisms of neurodegeneration, especially of Parkinsonian syndromes, and zinc metallobiochemistry. His recent findings linking the ubiquitin homologue, SUMO-1, to neurodegeneration and on protein molecular toxicity in Parkinson’s disease, have each opened up new fields in neurodegenerative disease research. His studies are based on the analysis of post-mortem human brain tissue obtained via donation through the National Neural Tissue Resource Centre, cell culture and animal models and employs a combination of proteomics and microscopic imaging approaches. He believes the main outcome of this interdisciplinary research will be the identification of valid targets for future disease therapeutics.

### Mr Peter Westwood
**Executive Officer (Griffith Health)**

Peter received his professional education through both Griffith (Master of Business Administration (Honours)) and RMIT (Associate Diploma in Applied Social Science). His career has included work in the human services and tertiary education sectors. For the past 13 years he has worked in administration of major tertiary institutions. He joined Griffith University in 1995, initially working in the business and commerce faculties and moving to the Office of Health Planning in 2003 to take up the role of Project Manager – Medicine and Oral Health. In this position he played a key role in managing the concurrent establishment, accreditation and rollout of the University’s new schools of Medicine and Dentistry and Oral Health. In 2005 he was appointed Executive Officer for Griffith Health where he provides policy and operational advice and support to the Executive Team. He looks forward to continuing to work with the Group through what will undoubtedly be an exciting time over coming years as the Group continues to grow and strengthen its position as a leader in health education and research.

## Staff News

### RECENT APPOINTMENTS:
- Meegan Crawford, Lecturer, Human Services (until December 2005)
- Teresa Scott, Lecturer, Human Services (until December 2005)
- Dr Dean Pountney, Lecturer, School of Medical Sciences
- Dr Jo Lewohl, Lecturer/Research Fellow, School of Medical Sciences

### ACTIVITIES, AND ACHIEVEMENTS
- Dr Jenny Osmond has been appointed to the Department of Child Safety Research Advisory Committee
- Dr Clare Tilbury has been appointed to the Uniting Care Queensland Community Service Group Committee

### CONFERENCE
- Australasian Epidemiology Association Annual Conference, October 5-7, 2005, Noah’s on the Beach, Newcastle
  - Australasian Epidemiology Association Annual Conference theme this year is *Looking Ahead in Epidemiology.*
Dean (Teaching and Learning) Report

I welcome the opportunity to work with colleagues in Griffith Health within the Dean (Teaching and Learning) portfolio over the next 3 years. My responsibilities focus on implementation of the Griffith University Academic Plan. This enables me to work with Heads of Schools, Program Convenors, Course Convenors and other colleagues in attempting to ‘get smarter’ with issues such as cross-campus consistency, streamlining the number of courses and programs, and building synergies at the discipline level across the Group. I chair the Group’s Learning and Teaching Committee (our inaugural meeting was held on 4 May), and represent the Group on the Academic Plan Task Force and on the Teaching and Learning Excellence Committee. The Dean of Health, Professor Debra Creedy, chairs the Health Group Assessment Board and is responsible for appeals and other student affairs. I am responsible for leading teaching and learning-related strategic initiatives and reviews.

I have three particular items to bring to your attention. First, thank you to those who have submitted applications for additional support for First Year Advisors in their Schools. Second, please contact your Head of School for further information about support available to enable and encourage Sessional Teaching Academics to undertake professional development in teaching and learning through attendance at GIHE Programs, or through School/Department Programs. We are grateful to the DVC (Teaching and Learning), Professor John Dewar, for funding both these initiatives.

And last, but not least, applications for National Health and Medical Research Council (NHMRC) scholarships and fellowships opened on 2 May. The Office for Research closing date will be 17 June and enquiries can be directed to Michelle Foley, Research Grants Officer in the Office for Research. Support is available for PhD scholars through to post-doctoral fellowships, mid-career fellowships, professorial fellowships and travelling fellowships. I encourage you to bring this to the attention of your colleagues and students and to think about applying this year. The NHMRC provides support of two kinds: research and development (scholarships and fellowships). And this latter form of support provides funding for time - our most precious resource. I encourage you to think about it, and as a former chair of the Population Health Panel for Mid-Career Fellowships, I am more than happy to talk with you about it.

Professor Stephanie Short
Dean (Teaching and Learning)

Group News

SCHOOL CHANGE OF NAME
At the Griffith University Council Meeting held on 3 May 2005 the Council approved the change of name of the School of Nursing to the School of Nursing and Midwifery.

SOCIAL WORK ACCREDITATION
The first stage of gaining accreditation for the new social work degree at the School of Human Services has commenced. Ms Ros Giles, consultant for the Australian Association of Social Workers (AASW), conducted a site visit at the School on 19 and 20 April 2005. A recommendation about the Griffith proposal will be considered by the executive of the AASW in June 2005.

GRADUATE CERTIFICATE IN COMMUNITY AND YOUTH WORK
A successful and well attended launch of the Graduate Certificate in Community and Youth Work was held on Friday 22nd April at Logan Campus. Industry partners from Boystown were present and an employee, Debbie Waddell, who has enrolled in the Graduate Certificate, spoke glowingly of her experience of studying at Griffith University.

Student News

AWARDS
Ramon Shaban (PhD student - School of Nursing, Logan) received the inaugural Journal of Emergency Primary Health Care Award for Best Paper in the category of Higher Degree student contributions.

Open Day

GRIFFITH UNIVERSITY
Griffith University is holding its annual Open Day on Sunday 10 July from 9.00 am until 2.00 pm. All campuses will be open including the new Griffith Centre for Medicine and Oral Health at Southport. Please make a note in your diary to come along and, Get smarter.

STOP PRESS

ACCREDITATION
The Dental Technicians and Prosthetists Board accredited the School of Dentistry and Oral Health programme for the Masters in Clinical Prosthetics.

The Australian Dental Council approved the School of Dentistry and Oral Health new programme accreditation for
- first and second year of the Bachelor of Oral Health in Dental Science for two years; and
- first year of the Bachelor of Oral Health in Oral Health Therapy for two years
Research

**FUNDED PROJECTS 2005**


Griffiths LR & Lea RA. Use of the Norfolk Island isolate to identify genetic risk factors involved in CVD. (GURG 2004–2005:$16,000).


Pountney DL. Annular Alpha-Synuclein Toxicity (US Parkinson’s Disease Foundation 2005:$55,000).


**Conference Presentations**


McAllister M. Mental Health Research Directions: UK/Australia Compared, Research Centre for Clinical Practice Innovation, 27 April 2005.


Shaban RZ. Paramedic Representations and Accounts of Mental Health Assessments in Practice: An investigation into paramedic judgment and decision-making of mental illness. Joint Education and Nursing Research Seminar Series, School of Nursing, Griffith University, 31 February 2005.


St John W & Wallis M. Qualitative analysis and managing qualitative data. Joint Education and Nursing Research Seminar Series, Research Centre for Clinical Practice Innovation, Griffith University, 7 April 2005.

**Publications**


Publications (contd)


