



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

FACULTY OF HEALTH RESEARCH NEWSLETTER

October 2011

Did you know?

Congratulations to all successful applicants in the current NHMRC Project and Fellowship round and ARC DP, Linkage and LIEF round. A full list is included in this edition of the Newsletter (see page 5).

CONGRATULATIONS TO OUR FACULTY RESEARCH AWARD WINNERS:

A/Professor Mark Parsons -
School of Medicine and Public
Health

His work is resulting in better outcomes for patients suffering from the sometimes devastating impact of stroke, he has pioneered major international advances in imaging based therapy selection and is pioneering new stroke therapies.

Professor Phil Hansbro - School
of Biomedical Sciences and
Pharmacy

Outstanding and exemplary research achievement during 2010.

Ms Kirstin Dunncliff - School of
Medicine and Public Health

Outstanding contribution to the management of research activity and experience of research students within the School.

WORKSHOP - MANAGEMENT OF RESEARCH EXPENDITURE

This workshop has been jointly organised by Research Services, Financial Services and Risk and Assurance and covers responsibilities when approving and processing expenditure against research grants. The workshop is aimed at administrative staff who approve financial transactions, assist staff who approve financial transactions and/or provide advice to researchers on expenditure.

The course will cover:

- responsibilities when approving transactions;
- decision making when approving transactions;
- Purchasing Policy and Fringe Benefit Tax (FBT) implications;
- consequences of inappropriate expenditure;
- case studies.

Date: 24 November 2011

Time: 9am-12pm

Venue: HPE2-03 (Health and Physical Education Bldg)

Staff may register for this course via HRonline, in the Training and Development menu. Click on Training Nominations and look under the category 'research'.



NEWSLETTER

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GROUNDBREAKING SCHIZOPHRENIA RESEARCH IN THE FACULTY OF HEALTH

Schizophrenia is one of the most common psychiatric disorders, affecting almost one in 100 people throughout the world at some stage in their life.

It has been recognized for many years that there is a large heritable component to the disease as twin studies have revealed an over-representation of cases in identical twins. Two recent high profile publications from researchers in the Faculty shed new light on the biological processes responsible for schizophrenia.

The Schizophrenia Psychiatric Genome-Wide Association Study (GWAS) Consortium, "Genome-wide association study identifies five new schizophrenia loci". Nature Genetics (2011) 43(10):969-976.

Over the past ten or so years new technologies and statistical analysis packages have been developed to investigate common diseases. It is generally accepted that there is a genetic component to all common diseases and that there are multiple small genetic effects that together contribute to disease risk. In a large international collaborative study aimed at understanding the complex genetic inheritance pattern of schizophrenia new insights into mental illness are now appearing. Collaborators from the University of Newcastle (Prof. Rodney J. Scott, Prof. Pat Michie, Dr. Paul Tooney, Dr. Carmel Loughland, Prof. Ulrich Schall, Dr. Frans Henskens) in association with a considerable number of other Australian researchers contributed to a recent report in *Nature Genetics* that has identified five new genetic regions associated with schizophrenia susceptibility. The importance of the findings is two-fold. For the first time there is now unequivocal evidence that there are a series of genetic susceptibility factors associated with the risk of developing schizophrenia. The study revealed 5 new genetic loci and confirmed 2 that had already been identified associated with the risk of schizophrenia. Even though the study comprised almost 9,400 cases and 12,460 control samples and was replicated in an additional 30,000 subjects, it did not have enough power to identify with confidence any additional genetic markers. Additional genetic modeling suggests there are multiple additional genetic factors associated with disease risk.

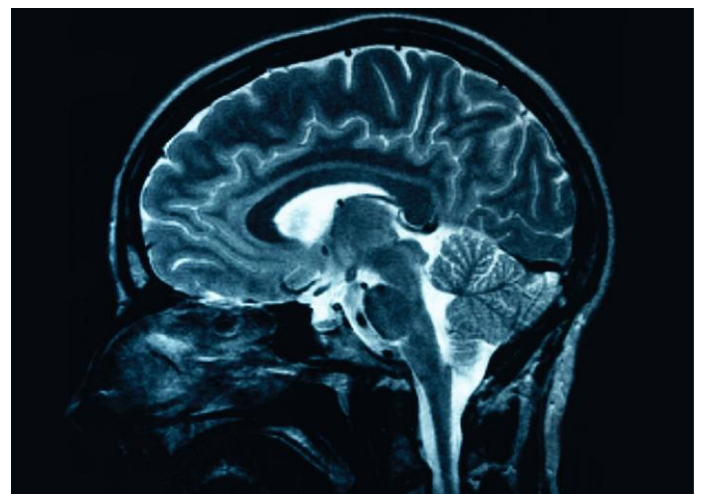
An important outcome of this study was the identification of a shared genetic association with bipolar disorder. From an inheritance perspective this is important as it begins to explain the over-representation of both schizophrenia and bipolar disorder within the same family and offers insight into the mechanisms underlying both diseases.

E Gardiner, NJ Beveridge, JQ Wu, V Carr, RJ Scott, PA Tooney and MJ Cairns. "Imprinted DLK1-DIO3 Region of 14q32 Defines a Schizophrenia-associated miRNA Signature in Peripheral Blood Mononuclear Cells

After analysing the genetic profile of a number of schizophrenic patients, Dr Cairns and his team identified a biomarker that is depleted in the blood of schizophrenia sufferers. This knowledge has the potential to lend itself to earlier diagnoses of schizophrenia in the future, as well as contribute to predicting a person's susceptibility to developing schizophrenia, and their body's likely response to a range of treatments. Earlier and more specific diagnosis also provides the opportunity for early intervention, such as counselling and medication, which may in the future prevent or reduce the severity of schizophrenia.

Understanding the fundamental causes behind schizophrenia and other psychiatric disorders may make it easier to diagnose and treat patients on a case to case basis.

At the foundation of the research is Dr Cairns' specialisation in brain development, as determined or affected by microRNA expression. "I believe this microRNA expression signature could be indicative of a developmentally significant alteration of an imprinted regulatory domain with potential relevance to the pathogenesis of schizophrenia," said Dr Cairns.



NEWCASTLE INNOVATION EXCELLENCE IN INNOVATION AWARDS 2011

Newcastle Innovation's annual Excellence in Innovation Awards recognises researchers who have engaged in innovation over a long period and who have also had major breakthroughs or received special recognition over the past year. Rising Star awards are also presented to two early stage researchers who have developed strong commercial linkages.

This year two researchers from the School of Biomedical Sciences and Pharmacy within the Faculty of Health were recipients of Newcastle Innovation awards. Prof. Paul Foster was presented with an Excellence in Innovation Award for his work in asthma and respiratory diseases. Dr. Murray Cairns received a Rising Star Award for his work in identifying novel biomarkers for Schizophrenia.

The event provided the opportunity for both industry and University leaders to recognise and acknowledge the innovative research undertaken at the University and ongoing support provided by Newcastle Innovation.



Prof. Paul Foster receiving his Excellence in Innovation award from Dr. Geoff Leonard AM, Chairman – Board of Directors for Newcastle Innovation



Dr. Murray Cairns receiving his Rising Star award from Dr. Craig Wheeler, 2010 rising start award recipient.

AUSBIOTECH NATIONAL CONFERENCE, ADELAIDE 16-19 OCTOBER 2011

The University of Newcastle was recently represented by Newcastle Innovation (NI) at Ausbiotech 2011. The AusBiotech national conference attracts senior people from across the Biotechnology and Health sector as well as investors and business development professionals. The attendance of prominent biotech individuals, offers key networking and partnering opportunities, and provides insights and inspiration on the major trends affecting the industry. Newcastle Innovation has received interest from a number of these companies including leading Pharma and Biotech companies looking for research programs that address unmet needs, identify novel biomarkers, provide novel therapeutic solutions and research tools that assist daily research and also accelerate drug discovery and development process. Over the coming weeks NI will be requesting information from researchers working on the following key areas of interest:

- Oncology
- Immunology
- Respiratory
- CNS
- Cardiovascular
- Bioinformatics
- Orphan diseases
- Research tools

Alternatively, if anyone has opportunities in the following areas please feel free to contact Chris Kelleher – chris.kelleher@newcastle.edu.au or Dr. Nagaraj Gopisetty – nagaraj.gopisetty@newcastle.edu.au from Newcastle Innovation.

Michelle Wong a PhD student at the Centre for Information-Based Medicine supervised by Rodney Scott and Nikola Bowden was recently short listed as one of NSW state finalists and presented her work in Sydney for the 2011 AusBiotech-GSK Student Excellence Awards. Newcastle Innovation assisted her in preparing the application. The prestigious award encourages student researchers from throughout Australia to compete for state and national titles in the country's leading competition for life science, biotechnology and bio-engineering students. Adam Collison, another PhD student from the faculty was last year's finalist from NSW.

RESEARCHER PROFILE – Paula Wye



Paula grew up on a farm near Nyngan, in central west NSW. She moved to Newcastle in 2000 to undertake undergraduate studies in psychology. While helping to develop the post graduate Health Psychology program, Paula

became aware of the impact good research could have on improving health policies and ultimately, benefiting the health of individuals and communities. Paula commenced a PhD to determine the policies and practices relating to smoking and nicotine dependence treatment in mental health hospitals. This research provided evidence of a practice gap in addressing smoking for those with mental illness, and led to an NHMRC National Institute of Clinical Studies fellowship, co-funded by the HCF Foundation. This fellowship sought to increase the provision of treatment for nicotine dependence to mental health clients, and start the process in closing this evidence-practice gap. Paula now works as a Program Manager for Population Health (based at Tamworth), and continues to work in the field of preventive health in mental health settings.

What got you interested in research? Health Psychology

Who and/or what inspires you? People with a mental illness, the Pop Health team. There are a few others, but I know they don't want their names mentioned... they know who they are!

What are you working on now? A huge project to systematically incorporate preventive care (Smoking, Nutrition, Alcohol, Physical Activity, Immunisation & Falls prevention) into community mental health services throughout Hunter New England area.

What are your goals? Be happy, make a difference, continue to learn, get the garden finished!

What's the last book you read for fun? Jean M. Auel's "The Land of Painted Caves".

What do you do when not working on your research? Time with family, friends & farm animals, fossicking, gardening, travel... just came back from volcano watching on Tanna, fantastic!

What's your favourite Newcastle beach? Caves beach. I like caves more than beaches.

Where's your favourite place for coffee? Wherever friends are is just fine.

SCHOOL OF HEALTH SCIENCES

Collaboration between the University of Sydney and the University of Newcastle has been successful in obtaining an NHMRC Project grant of \$540,000. Associate Professor Fiona Blinkhorn, a specialist Paediatric dentist, and Program Convenor of the Graduate Diploma in Dental Therapy at the University of Newcastle has teamed up with Professor Anthony Blinkhorn, Chair of Population Oral Health, University of Sydney, Dr David Walker, NHMRC Research Fellow, University of Sydney and Ngiare Brown from The Aboriginal Medical Association. The focus of their research is Aboriginal early childhood oral health and aims to keep children aged 12 months to four years free of dental decay. Dental decay is a serious problem for Aboriginal communities and it causes a large amount of pain and suffering especially for preschool Aboriginal children. It is the most common medical problem for Aboriginal children, and parents suffer great stress if they have a child with toothache. Obtaining dental care is difficult for many remote communities and the delay in receiving treatment often results in many young children requiring multiple extractions of baby teeth under a general anaesthetic as the only practical option.

Podiatry Lecturer Fiona Blyton's research into muscle cramp in children with Charcot Marie Tooth disease Type 1A (CMT1A), an inherited neurological disease, has been accepted for publication in the prestigious journal *Neurology*. The work explores clinical factors associated with muscle cramp in 81 Australian children diagnosed with CMT1A. This research was completed in collaboration with the Institute for Neuroscience and Muscle Research (Sydney) and paediatric neurologists from The Children's Hospital at Westmead and the Royal Children's Hospital (Parkville, VIC).

The N&D research group NUEBaND was just successful in a grant from the Faculty to add a blood pressure analyser to the existing body composition equipment in our anthropometry laboratory. The addition of the BP cuff further broadens the type of body composition analysis that is undertaken by our team and makes us a valuable partner in the Physical Activity and Nutrition PRC.

A/Prof Pauline Chiarelli from Physiotherapy in the School of Health Sciences won the University Alumni Award for Exceptional Community Service for her community work in the area of continence issues for women and men.

The 36th University Alumni Awards were held at the Newcastle City Hall and the quality of the finalists for all the awards was truly outstanding. It is a testament to Pauline's sustained hard work that she was successful considering the competition.

The grant will support a Phase Two Clinical Trial of an Oral Health Promotion Program delivered by Aboriginal Health Workers to Prevent Early Childhood Caries in Aboriginal Children. Aboriginal Health Workers are the backbone of the primary care medical service in Aboriginal communities and could play an important role in giving preventive dental advice and support to Aboriginal families.



Pictured: Fiona Blinkhorne

Kirsti Harcz, Carol Hills and Donna Wright from HNEHealth won the university Work Integrated Learning award for their design and research in role emerging placements in mental health in Hunter New England Health.

SMPH WELCOMES ANDREA NOLAN



Andrea Nolan has recently joined the School of Medicine and Public Health in the role of Research Officer, replacing Kirstin Dunncliff and Cleo Moore. Andrea is available full-time to assist with the administration of research grants, providing monthly income and

expenditure reports, monitoring expenditure and ordering equipment and consumables. Andrea is based at the McAuley Building, Mater Hospital and can be contacted on 403 35691 or smph-research@newcastle.edu.au. All the staff at the School of Medicine and Public Health welcomes Andrea!

CONGRATULATIONS TO OUR SUCCESSFUL GRANT APPLICANTS

NHMRC PROJECT GRANTS

Prof Amanda Baker, Awarded \$1,117,558

Project: Eating As Treatment (EAT): a trial of a dietitian provided health behaviour change intervention to improve nutrition in Head and Neck cancer patients undergoing radiotherapy

Prof Robert Callister, Awarded \$461,325

Project: Development of peripheral sensory pathways in humans

A/Prof Phillip Dickson, Awarded \$348,675

Project: Role of Tyrosine Hydroxylase Isoforms in Parkinson's Disease

Prof Paul Foster, Awarded \$505,950

Project: Mechanisms of steroid resistant inflammation in mouse models of asthma

Prof Paul Foster, Awarded \$581,010

Project: Mechanisms controlling the expansion of inflammatory cells in asthma: microRNAs as new treatment targets.

A/Prof Philip Hansbro, Awarded \$599,685

Project: Mast cell tryptases in COPD and CD

Dr Simon Keely, Awarded \$307,500

Project: The Role of Hypoxia in Wound Healing During Mucosal Inflammation

A/Prof Kypros Kypri, Awarded \$353,035

Project: Hospital Outpatients Alcohol Intervention

Prof Christopher Levi, Awarded \$1,130,380

Project: Systems of care and outcomes in TIA and minor stroke

Prof Robert Sanson-Fisher, Awarded \$233,710,

Project: Increasing organ donation registration

A/Prof Peter Schofield, Awarded \$743,450

Project: An olfactory 'stress test' for the early detection of Alzheimer's disease

Prof Roger Smith, Awarded \$1,694,709

Project: Understanding the Origins of Diabetes and Kidney Disease in Aboriginal Children and Their Mothers

Dr Neil Spratt, Awarded \$422,275,

Project: Brief body cooling to keep brain pressure down

A/Prof Dirk van Helden, Awarded \$192,450,

Project: Snakebite First Aid

A/Prof Xu Dong Zhang, Awarded \$341,175

Project: A novel approach to improve therapeutic efficacy of specific inhibitors against mutated BRAF in

melanoma

NHMRC FELLOWSHIPS

Career Development Fellowship

Dr Neil Spratt, Title: A new way to prevent excess pressure on the brain

Early Career Fellowship

Gerard Kaiko, Title: The role of susceptibility genes and microbiota in inflammatory diseases.

ARC DISCOVERY PROJECTS

Prof Keith Jones, Awarded \$330,000

Project: The control of chromosome division during female meiosis

Dr Frini Karayanidis, Asst Prof Birte Forstmann, Dr Rhoshel K Lenroot, **A/Prof Mark W Parsons**, Em/Prof Patricia T Michie, A/Prof Natalie A Phillips,; A/Prof Eric-Jan Wagenmakers, **Awarded \$387,000**
Project: Cognitive flexibility from adolescence to senescence: variability associated with cognitive strategy and brain connectivity

ARC LINKAGE PROJECTS

Prof Robert W Sanson-Fisher, Ms Anita Tang, **Dr Mariko Carey**, Miss Jamie Bryant, **Dr Flora Tzelepis**, Ms Kathryn Chapman, Ms Paula Vallentine, **Prof Christopher M Doran**, **Dr Patrick McElduff**, **Awarded \$249,408**

Project: Improving cancer treatment systems: a randomised controlled trial of a consumer action model for cancer patients receiving chemotherapy

ARC LIEF

Prof Paul S Foster, **Prof Peter Gibson**, Prof Robert J Aitken, **Prof Roger Smith**, **Prof Rodney J Scott**, **Awarded \$180,000**

Project: FACSARIA III - Fluorescence activated cell sorter



A WORD FROM DEPUTY HEAD OF FACULTY RESEARCH

Congratulations to Laureate Professor Paul Foster

Professor Paul Foster has been awarded the University of Newcastle's highest honour – the title of Laureate Professor. Laureate Professor Foster, who is one of the world's leading respiratory researchers, is a co-director of the University's Priority Research Centre for Asthma and Respiratory Diseases and the Hunter Medical Research Institute's (HMRI) Virus, Infection/Immunity and Asthma (VIVA) Program. Since 2003, the work of Professor Foster's teams has attracted peer-reviewed grant income of more than \$10 million. Last month, he and his team received more than \$1 million from the National Health and Medical Research Council for two projects – to investigate the causes behind asthma patients' resistance to steroid treatment; and to research molecules known as microRNAs and their potential role towards a new treatment for asthma. This is the 7th Laureate Professorship awarded by the University and the second in the Faculty of Health.

Unexpected Reward for Commitment to Research Students

Several researchers will have a pleasant surprise when they check their research grant accounts to find an unexpected credit. This is because the Dean of Graduate Studies, Professor Scott Holmes had some unallocated scholarship funds and decided to use this to provide partial reimbursement to supervisors who had used their research grant funds to support RHD scholarships. Generosity repaid.

Collaboration with Chinese Researchers

As part of a strategy to foster research collaborations with key partner institutions in China, the Faculty hosted visits by two Chinese delegations in November. Stroke researchers in Newcastle have an established collaboration with Harbin Medical University (HMU) on the use of hypothermia and brain imaging in the acute treatment of stroke. A team from HMU, and neurosurgeons from the Second Affiliated Hospital of HMU, visited Newcastle to plan the extension of this collaborative project that will use proteomics to identify clinically useful biomarkers in cerebrospinal fluid and blood that will be used to guide the use of hypothermia in particular patients. The second delegation came from the Shanxi Cancer Hospital and Institute in Taiyuan. This Institute already has links with Associate Professor Xu Dong Zhang and were here to explore opportunities to expand collaboration and researcher exchanges in a broad range of cancer related areas.