


Research successes



Government of South Australia
Children, Youth and Women's
Health Service

Issue 4, 2005 – Sept to Nov

'Research successes' is a quarterly newsletter from the Children, Youth and Women's Health Service (CYWHS) outlining our latest research achievements.

It includes entries from the Women's and Children's Hospital and Child and Youth Health, together with the Child Health Research Institute (CHRI) marked , and University of Adelaide departments located on the Hospital campus.

Research successes is emailed widely and distributed in hard copy. It is also available on the CYWHS website (www.cywhs.sa.gov.au).

To contribute content or to provide feedback, please contact CYWHS Manager Research Communications Dr Edna Bates, tel: 8161 7388, email: edna.bates@cywhs.sa.gov.au.

Grants

NH&MRC

Prof Caroline Crowther, Dr Jodie Dodd, Dr Andrew McPhee and Ms Vicki Flenady – three year support for: Vaginal progesterone for the prevention of neonatal Respiratory Distress Syndrome – a randomised controlled trial - \$1,202,350, project grant awarded through the University of Adelaide.

Prof Michael Sawyer, Prof Susan Spence and Prof George Patton – three year support for: The beyondblue schools research initiative: A two-year follow-up - \$812,500, project grant awarded through the University of Adelaide.


Prof Michael Sawyer, Assoc Prof Michael Bittman, Prof Annette La Greca and Assoc Prof Peter Baghurst – three year support for: Relationship between caregiver time and mental health & well-being of mothers caring for children with chronic disability - \$347,225, project grant awarded through the University of Adelaide.


Assoc Prof Donald Anson and Assoc Prof Thomas Sferra – three year support for: New treatments for Storage Diseases - \$510,450, project grant awarded through the University of Adelaide.


Prof John Hopwood, Dr Kim Hemsley and Dr Allison Crawley – three year support for: Treating children affected by progressive brain disease - \$744,750, project grant awarded through the University of Adelaide.

Prof John Hopwood, Dr Eric Kremer and Dr Kim Hemsley – three year support for: Gene therapy to treat progressive brain disease in children - \$479,750, project grant awarded through the University of Adelaide.

Assoc Prof Peter Baghurst, Prof Michael Sawyer, Dr Nicholas Burns and Prof Theodore Nettelbeck – two year support for - Lead, intelligence, and behavioural problems in children - \$392,750, project grant awarded through the University of Adelaide.

 Dr Maria Makrides, Assoc Prof Robert Gibson, Dr Michael Gold, Dr Joanna Hawkes, Assoc Prof Susan Prescott, Prof Heddy Zola – five year support for: n-3 fatty acids in pregnancy and childhood allergy - \$767,500, project grant awarded through the University of Adelaide.

 Assoc Prof Simon Barry, Prof Frances Shannon, Prof Heddy Zola, Assoc Prof Richard D'Andrea – three year support for: What are the genes controlling the T cell regulatory phenotype? - \$472,750, project grant awarded through the University of Adelaide.

 Assoc Prof Michael James, Prof Prasanthan Sanders, Dr Glenn Young, Dr James Edwards, Dr Robert Metcalf and

Assoc Prof Robert Gibson – three year support for: Dietary fish oil and post surgical atrial fibrillation - \$525,000, project grant awarded through the University of Adelaide.

Dr Katrina Jolliffe, Prof Tania Sorrell and Assoc Prof David Ellis – three year support for: Fungal Phospholipases: A novel drug discovery platform - \$575,850, project grant awarded through the University of Sydney.

Assoc Prof Keryn Williams, Dr Helen Brereton, Prof Douglas Coster and Assoc Prof Donald Anson – three year support for: Gene transfer to the eye - \$509,025, project grant awarded through Flinders University.

Dr Jian Li, Prof Roger Nation, Dr Craig Rayner and Prof John Turnidge – three year support for : New therapy for gram-negative superbugs - \$341,750, project grant awarded through Monash University.



Prof Tom Gonda, S Grimmond, B Gabrielli and Assoc Prof Simon Barry – five year support for: Arrayed whole genome retroviral gene expression library for functional gene discovery - \$1.8 million for MGBPP Special Program in Genomics/Bioinformatics awarded through the University of Queensland.

Prof Justin Beilby, Assoc Prof Alan Crockett, Prof Peter Mudge, Assoc Prof Philip Ryan, Dr Robert Adams, Dr Rima Staugas and Dr Nigel Stocks – two year support for: Spirometry and asthma management in children and adults in general practice - \$0.5 million, General Practice Clinical Research Grant awarded through the University of Adelaide.

ARC



Prof Tom Gonda, S Grimmond, B Gabrielli and Assoc Prof Simon Barry – ARC LIEF Grant for: Robotics for automation of an arrayed whole genome cDNA retroviral library - \$1.3 million awarded through the University of Queensland.

CHANNEL 7 CHILDREN'S RESEARCH FOUNDATION

Dr Sharon Byers for: Substrate deprivation therapy for MPS IVA using RNAi – \$30,000 for 2006, awarded through CYWHS.

Dr Mark Corbett and Assoc Prof Jozef Gecz for: Characterisation of PHF6 function and its role in x-linked Mental Retardation - \$15,000 for 2006, awarded through CYWHS.

Mr Andrew Lawrence for: Molecular characterization of *Bordetella pertussis* strains circulating in Australian and New Zealand pre and post introduction of acellular pertussis vaccines - \$ 45,000 for 2nd year, extended from 2004/5 grant, awarded through CYWHS.

Ms Judi Nairn for: Clinical implications of systemic inflammation in children with chronic kidney disease – \$10,000 for 2nd year, extended from 2004/5 grant, awarded through CYWHS.

Mrs Jillian Nicholl for: Validation of a whole genome CGH-array for detection of cryptic chromosome abnormalities - \$15,000 for 2006, awarded through CYWHS.



Dr Patrick Quinn, Dr Michael Gold, Assoc Prof Simon Barry and Dr Ross Butler for: The effect of *Lactobacillus GG* in a murine model of cow's milk allergy - \$18,000 for 2006, awarded through CYWHS.

Prof Philip Darbyshire, Prof Wendy Schiller, Assoc Prof Colin MacDougall for: Investigating physical activity patterns of school children with chronic illness: bringing children's voices into research, policy and practice - \$38,000, awarded through Flinders University.

Dr Shiwani Sharma, Assoc Prof Jozef Gecz, Assoc Prof Jamie Craig, Dr Raman Kumar, Dr Kathryn Burdon for: Investigation of the function of Nance-Horan Syndrome (NHS) gene - \$35,000 for 2006, awarded through Flinders University/Flinders Medical Centre.




Dr Allison Cowin, Rob Ramsay, Dr Tim Raynor, Michele Luchetti for: To determine the basis for reduced fibrosis and improved scar formation in c-myb heterozygous skin - \$34,000 for 2006, awarded through CHRI.



Dr Antiopi Varelias, Assoc Prof Richard D'Andrea, Andreas Evdokiou, Sally-Anne Stephenson for: Investigation of the role of ephrin-B1 in osteosarcoma tumorigenicity and metastasis - \$15,000 for 2006, awarded through CHRI.

 Dr Stephen Wood, Assoc Prof Doug Brooks, Prof John Hopwood for: Regulation of protein trafficking in Lysosomal Storage Disease by the FAM deubiquitylating enzyme - \$30,000 for 2006, awarded through CHRI.

 Assoc Prof Simon Barry, Assoc Prof Jenny Couper, Prof Don Robertson, Prof Heddy Zola for: Characterisation of human cord blood regulatory T cells for autoimmune disease diagnosis - \$25,000 for 2006, awarded through the University of Adelaide.

Assoc Prof Jenny Couper for: The effect of folate on early atherosclerosis in children with type 1 diabetes - \$40,000 for 2006, awarded through the University of Adelaide.

Prof Caroline Crowther for: Is periodontal disease a risk factor for preterm birth? - \$35,000 for 2nd year, extended from 2004/5 grant, awarded through University of Adelaide.

Dr Jodie Dodd for: Progesterone for the prevention of neonatal respiratory distress syndrome - \$44,000 for 2006, awarded through the University of Adelaide.

Prof Alastair MacLennan for: Hereditary variations in the fetal inflammatory response to infection may cause preterm delivery and cerebral palsy – a pilot study to validate methods – \$25,000 for 2006, awarded through the University of Adelaide.

Dr Maree O'Keefe for: Parent priorities for medical student learning in complementary and alternative medicine - \$18,000 for 2006, awarded through the University of Adelaide.

RIBG FUNDING

Research Infrastructure Block Grant Funding was made available for the support of research equipment that is advancing the strategic goals of the WCH, as part of the CYWHS.

The following chief investigators were successful:

Assoc Prof Don Anson - \$25,225 - for homogenizer for tissue extractions; metabolic cages for mice; stereotaxic frame and injection device; and an underbench minus 20 freezer for storage of tissue and analysis DNA samples for Real Time PCR.

Assoc Prof Doug Brooks - \$28,345 - Lysosomal Disease Research Unit - Infrastructure support for computing hardware and software.

Prof Tony Ferrante - \$65,000 - 5th floor real-time PCR facility and automated RNA analysis/quantitation system.

Assoc Prof Jozef Gecz - \$48,342 - Molecular mechanisms of human disease.

Prof John Hopwood - \$27,546 - Bioimaging system for the analysis of histological and morphological investigations.

Dr Declan Kennedy - \$22,935 - Multipurpose physiological data analysis software to support and enhance research analyses into sleep disorders affecting children's breathing and brain functioning

Dr Peter Meikle - \$54,569 - Improved facilities for preparation of biological samples for analysis by mass spectrometry

Dr David Parsons - \$26,198 - Stereomicroscope epi-fluorescence: Imaging of fluorescent labels in whole tissue without cross sectioning.

Prof Michael Sawyer - \$7601 - Use of web-based data collection to assess the effectiveness of interventions designed to improve the mental health and well-being of secondary-school students.

Awards

Branka Grubor-Bauk (Immunopathology) won the 2005 Young Investigator Award.

Adeline Lau (Genetic Medicine) was runner-up in the 2005 Young Investigator Award.

Medical student and Bachelor of Medical Science candidate, **Karen McGlaughlin** (Australian Craniofacial Unit), was awarded best poster prize in the Craniosynostosis Section at the International Society of Craniofacial Surgery XIth International Congress, Coolum, Queensland. Her paper was entitled "Genotype-phenotype correlation of craniofacial morphology in Apert syndrome".

Debra Palmer (Nutrition) won an MS McLeod Medal for Research Excellence – The effect of egg ingestion on ovalbumin concentration in human milk.

Piotto Lino (Medical Imaging) won an MS McLeod Medal for Research Excellence – Effects of folic acid on endothelial function in obese children and adolescents.

Dr Taher Omari (Gastroenterology) won an Ms McLeod Medal for Research excellence – New insights into the physiology, pathophysiology, diagnosis and treatment of gastroesophageal reflux in children.

New appointments

Phil Robinson (Mental Health) has been appointed as A/Executive Director of Clinical Governance, Education and Research at the CYWHS.

Anne Bourke (Allied Health) has been appointed as Manager, Research Development for CYWHS.



Assoc Prof Bob Gibson (CHRI/CNRC) has been appointed as the inaugural Professor of Functional Food Science with the University of Adelaide's School of Agriculture, Food and Wine based at the Waite Campus.



Dr Maria Makrides (CHRI/CNRC) has been appointed Director of the Child Nutrition Research Centre when Assoc Prof Bob Gibson takes up his new position in the New Year.



Assoc Prof Richard D'Andrea (CHRI) will become Deputy Director of CHRI when Assoc Prof Bob Gibson takes up his new position.

Dr Gordon Howarth (Gastroenterology) commenced a Cancer Council South Australia Fellowship.

Publications



Abdo M, Irving B, Hudson P, Zola H (2005) Development of a cluster of differentiation antibody-based protein microarray. *J Immunol Methods* 305: 3 - 9

Agir H, Moore MH, David DJ, McLean NR, Cooter R (2005) Fracture patterns and bone healing in recurrent mandibular fractures: a clinical study of 13 patients. *Plast Reconstr Surg* 116:427-36; discussion 437- 439

Anderson PJ, Barker JH, David DJ (2005) Management of facial dysmorphogenesis in Nemaline myopathy: a case report. *World J Ortho* 6: 156 – 60

Anderson PJ, David DJ (2005) Spinal anomalies in goldenhar syndrome. *Cleft Palate Craniofac J* 42: 477- 80

Anderson PJ, David DJ (2005) Hyperostosis as a late sequel of parasymphiseal mandibular fractures in two children. *J Craniomaxillofac Surg* 33: 188 - 190

Anderson PJ, David DJ (2005) Late results after unicoronal craniosynostosis correction. *J Craniofac Surg* 6: 7-44

Anderson PJ, Molony D, Haan E, David DJ (2005) Familial Parry-Romberg disease. *Int J Pediatr Otorhinolaryngol* 69: 705 - 708


Anderson PJ, Tan E, David DJ (2005) Simultaneous multiple vector distraction for craniosynostosis syndromes. *Br J Plast Surg* 58: 626 - 31

Barker DS, Netherway DJ, Krishnan J, Hearn TC (2005) Validation of a finite element model of the human metacarpal. *Medical Engineering & Physics* 27: 103 - 113

Darbyshire P, MacDougall C, Schiller W (2005) Multiple methods in qualitative research with children: more insight or just more? *Qualitative Research*. 417 – 436


David DJ (2005) Reconstruction: Facial Clefts. In - Plastic Surgery (eds SJ Mathes and V R Hentz) 2nd Edition, Volume 4: Paediatric Plastic Surgery, Chapter 100; published by WB Saunders, USA

Gibson CS, MacLennan AH, Hague WM, Haan EA, Priest K, Chan A, Dekker GA for the SA Cerebral Palsy Research Group (2005) Associations between inherited thrombophilias, gestational age, and cerebral palsy. *Am J Obstet Gyn* 193: 1437.e1 – 1437.e12

 Gibson RA, Hawkes JS, Makrides M (2005) Dietary nucleotides do not alter erythrocyte long-chain polyunsaturated fatty acids in formula-fed term infants. *Lipids* 40: 631-634

Gray TL, Casey T, Selva D, Anderson PJ, David DJ (2005) Ophthalmic sequelae of Crouzon syndrome. *Ophthalmology* 112: 1129 - 34

Hagans O, Dubos A, Abidi F, Barbi G, Van Zutven L, Hoeltzenbein M, Tommerup N, Moraine C, Fryns JP, Chelly J, van Bokhoven H, Gecz J, Dollfus H, Ropers HH, Schwartz CE, de Cassia Stocco Dos Santos R, Kalscheuer V, Hanauer A (2005) Disruptions of the novel KIAA1202 gene are associated with X-linked mental retardation. *Hum Genet* Oct 26: 1-13

 Hawkes JS, Gibson RA, Robertson D, Makrides M (2005) Effect of dietary nucleotide supplementation on growth and immune function in term infants: a randomized controlled trial. *Eur J Clin Nutr* Oct 19 [E pub prior to print]

Hodge G, Hodge S, Nairn J, Tippett E, Holmes M, Reynolds PN (2005) Post-storage leuco-depleted plasma inhibits T-cell proliferation and Th1 response *in vitro*. Characterisation of TGFb-1 as an important immunomodulatory component in stored blood. *Transplantation* 80: 95 -101


Hodge G, Hodge S, Reynolds P, Holmes M (2005) Upregulation of IL-8, IL-10, MCP-1 and MCP-3 in peripheral blood monocytes in stable lung transplant patients - are immunosuppression regimes working? *Transplantation* 79: 387-391


Netherway DJ, Abbott AH, Anderson PJ, David DJ (2005) Intracranial volume of patients with nonsyndromal craniosynostosis. *J Neurosurg* 103: 137 - 141

Oliva A, Vernooy K, Cooter R, David DJ, Pascali V (2005) Helmet-induced neck degloving in a motorcyclist. *J Trauma* 58: 370 - 371

Parashar SY, Anderson PJ, Cox TC, McLean N, David DJ (2005) Multidisciplinary Management of Opitz G BBB Syndrome. *Ann Plast Surg* 55: 402 - 408

 Perry NL, Zola H, Nicholson IC (2005) Histamine receptors on T lymphocytes. *J Biol Regul Homeost Agents* 19: 78 - 83


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 Zola H (2005) The 8th Human Leucocyte Differentiation Antigens Workshop: Conference, Adelaide 2004. *J Biol Regul Homeost Agents* 19: 72

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Student news


Karen McGlaughlin (Australian Craniofacial Unit) was awarded a student grant to attend and present at the Australasian Society for Human Biology, 19th Annual Scientific Meeting, Sydney, 2005.


Mark Geier and **Geoff Matthews** (Gastroenterology) were awarded travel grants to each present posters at Australian Gastroenterology Week meeting in Brisbane in October.

PhD student **Roger Yazbeck** (Gastroenterology) gave oral presentations at the Australian Gastroenterology Week meeting and Inflammatory Bowel Disease conference in Muenster, Germany in October. He also presented a poster at the Dipeptidase meeting in Magdeburg, Germany in May.

Other


"Food for Thought - Investigating Parent's Perspectives of the Impact of Their Child's Home Enteral Nutrition" was presented at the Australian Gastroenterology Week meeting in October and chosen out of 124 as a poster of merit – authors **Chris Thomas**, **Alison Forrest**, **Dr Jenny Fereday**, **Prof Geoff Davidson** and **Prof Philip Darbyshire**.

 **Dr Maria Makrides** (CNRC/CHRI) was an invited participant in September of the EU consensus working group regarding dietary recommendations for pregnant and lactating women relating to fat, fatty acids and anti-oxidants.

 **Dr Maria Makrides** (CNRC/CHRI) was an invited speaker at the HSNZ/ANZSBT/ASTH* Annual Scientific Meeting, Sydney, 16-19 October presenting "Iron Nutrition in Pregnancy and Early Life".

*Haematology Society of Australia and New Zealand/Australian & New Zealand Society of Blood Transfusion Australasian Society of Thrombosis & Haemostasis

 **Prof Heddy Zola** (CHRI) chaired the Science Panel for a Commonwealth Review of the Australian Stem Cell Centre.

 **Prof Heddy Zola** (CHRI) is on the NH&MRC Selection Advisory Committee (SAC) assessing applications for urgent research into a potential avian influenza-induced pandemic.

Assoc Prof Yee Khong (Histopathology) has had his book, *Handbook of Endometrial Pathology*, published by Taylor & Francis. Written with Dr Sez Ismail from Manchester UK, this is a book that provides a clinically pragmatic and diagnostically up-to-date basis for the pathological examination of the endometrium, one of the most commonly examined tissues in histopathology. It has been written for pathologists, gynaecologists and oncologists.