



Singing the praises of Dr Tim Chataway

The quiet achievements of **Dr Tim Chataway** were recognised during National Science week, when he was named the Unsung Hero of South Australian Science.

Dr Chataway has a modest scientific profile that belies an enormous contribution to many successful biomedical research projects. After honing his skills as a protein chemist, in 2002 Dr Chataway began working with Dr Weiping Gai in Human Physiology. Together they identified and isolated proteins whilst investigating Parkinson's Disease. At the time, protein analysis was still a developing field, overshadowed by studies of the human genome and not yet recognised as a fundamental part of biomedical research.

Over the next few years, Dr Chataway championed the importance of protein analysis as a new frontier in biomedical science. His far-sightedness led to the establishment of the first dedicated proteomics facility in South Australia.

As Head of the Flinders Proteomics Facility, Dr Chataway has built a cutting edge, common-service facility, accessible to all South Australian researchers. He works with a consistent long-term vision, carefully selecting the next acquisition which will add most to the facility. Unlike most other services of this type, the facility's budget remains in the black.

Over the past ten years, Dr Chataway has made major contributions to a huge range of projects, from ophthalmology to cancer research; from neuroscience to plant diseases. Dr Chataway's expertise derives from a very hands-on approach. He is a techniques wizard. Through a

combination of knowledge, experience and technical ability he masters highly complex equipment and explores its full capabilities. Dr Chataway has personally been responsible for training literally dozens of researchers in proteomics.

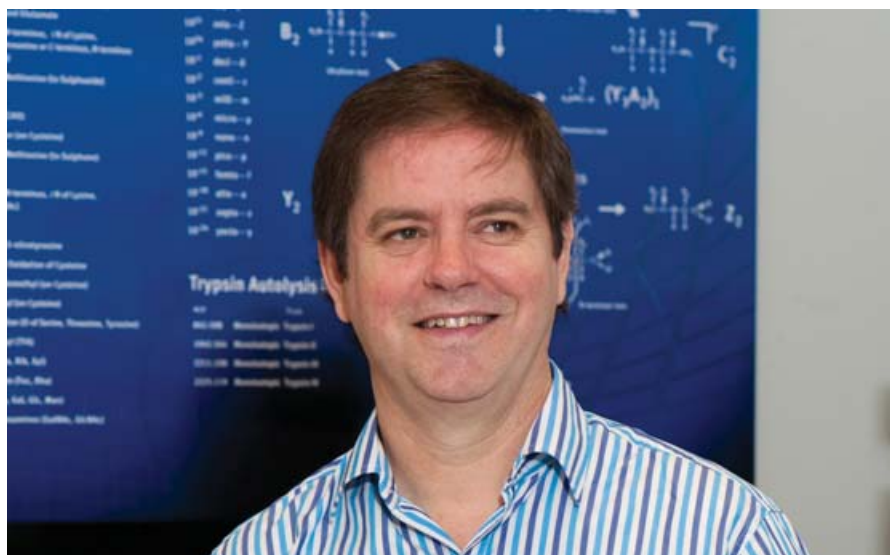
The recipients of Dr Chataway's generosity include researchers and students from nearly every department in the School of Medicine at Flinders University, together with researchers from other faculties and institutions, including the CSIRO, Universities of Adelaide and South Australia, IMVS and the Queen Elizabeth Hospital. He can usually be found in the laboratory, helping a bewildered-looking student or providing high level advice to a post-doctoral fellow or professor. He is sought out by researchers across Adelaide for his detailed knowledge. His expertise has made a score of projects productive not only because he knows exactly what the equipment is capable of, but because he also keeps abreast of the latest scientific literature.

Dr Chataway's dedication to teamwork is evidenced by the hours he spends helping others to get their projects working rather than concentrating on his own research. On many occasions, he has provided timely troubleshooting which has turned a failing project around, without being recognised with authorship. Dr Chataway is unassuming and generous with his time and motivated by the satisfaction of making things work, rather than seeking the limelight for himself.

Dr Chataway's work has been crucial to many biomedical research projects in South Australia over the last ten years. For many senior managers and administrators his role flies under the radar. For his numerous colleagues and collaborators, he is really an unsung hero of South Australian Science.

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Article by Professor Simon Brookes



Dr Tim Chataway

From the Executive Dean

Research in the Faculty of Health Sciences at Flinders University continues to be relevant, recognised and rewarded. This issue of *Research Pulse* is filled with good news stories, including the recognition bestowed upon some of our highest achievers. I would especially like to congratulate Professors Malcolm Smith, Andrew Tonkin and Paddy Phillips for receiving Queen's Birthday Honours, Dr Tim Chataway, for being named the 'Unsung Hero of South Australian Science' for his untiring efforts in our proteomics laboratory, Professor John Miners who has been honoured with a Scientific Achievement Award from the International Society for the Study of Xenobiotics and Professor Eimear Muir-Cochrane for being awarded the SA Department of Health Nursing Excellence Award for Nursing Research.

The list of grants recently awarded to research groups in our Faculty celebrates the success of numerous research teams and demonstrates the wide scope of our expertise. From the Southern Knowledge Transfer Partnership Projects to the large-scale studies, our research is making a positive impact at local, national and international levels.

Within our wider research community, the research themes for the South Australian Health and Medical Research Institute (SAHMRI) have recently been announced. Cancer, Heart Disease, Healthy Mothers, Babies and Children, Nutrition and Metabolism, Mind and Brain and Infection and Immunity are at the forefront of SAHMRI's preliminary research focus. Indigenous health research is also an important focus and is embedded across all of the themes. With recognised strengths in these areas, our Faculty's researchers will be well placed to contribute to, and benefit from, collaboration with others through the SAHMRI.

Professor Michael Kidd AM
Executive Dean
Faculty of Health Sciences
Flinders University

Leading the national pharmaceutical drugs misuse strategy

Pharmaceutical drugs offer a wide range of benefits to the Australia community. However, in recent years there has been an increase in the problems associated with poor quality use and misuse of these medications, particularly medications used for conditions such as anxiety and insomnia (benzodiazepines) and for the treatment of pain (opioids).

One such problem with the poor quality use of these medications occurs when they are prescribed in situations where other treatments would be more appropriate, and this can lead to poorer outcomes for patients. Other harms that occur as a result of pharmaceutical drug misuse (PDM) include overdoses, incorrect administration (such as the injection of oral medications), and a range of criminal activities, such as trafficking, fraud and extortion. Equally concerning is that, in response to increasing levels of PDM, doctors may become less willing to prescribe these medications, even when this is appropriate, because of the fear they will be misused.

In response to these concerns, the Ministerial Council on Drug Strategy asked that a National Pharmaceutical Drugs Misuse Strategy (NPDMS) be developed. A consortium led by the Director of the National Centre for Education and Training on Addiction, **Professor Ann Roche**, based at Flinders University, successfully tendered to undertake the work, which commenced in late 2010.

The year-long project involves an extensive review of literature, development of a discussion paper, and a national consultation with key stakeholders. Consultation workshops have been held all across Australia, in addition to both interviews with, and written submissions from, interested parties. This information has now been incorporated into a draft Strategy.

It is clear there is a range of complex issues underpinning pharmaceutical drug misuse in Australia, and this calls for a multi-layered strategic response. The Strategy will address issues such as prescribing and dispensing practices, regulation and monitoring, and consumer and law enforcement-oriented approaches. Given the benefits that patients can derive from using these medications, the Strategy also aims to ensure that any measures implemented do not restrict patients' access to medication, or stigmatise their use.

The NPDMS is to be provided to relevant Ministers for endorsement later this year.

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Turning back the clock...

In his latest study, **Professor Neil Piller** is investigating whether non-surgical treatments can slow, stop or even reverse the signs of ageing caused by impaired lymphatic function.

When the lymphatic system is working well it drains fluid called 'lymph' from the tissues and directs this to 'lymph nodes' which filter out cellular debris, bacteria, and toxins. In the case of 'bags under the eyes' (infra-orbital oedema) and 'dark circles' (abnormal infra-orbital dyschromia) the lymph accumulates, causing swelling and reduced skin elasticity. An inflammatory response ensues, triggering the deposition of collagen fibres and making the skin thicker and rougher. The subsequent accumulation of melanin pigment and haemosyderin result in a darkened appearance of the skin.

In the past, therapists and patients have reported improvements in appearance

after boosting lymph flow with a combination of facial massage (manual lymphatic drainage) and breathing techniques. Professor Piller will test the effectiveness of these therapies for reducing 'bags under the eyes' and 'dark circles' in sixty study participants by analysing skin temperature, venous drainage, facial volume, the amount of fibre in tissues and participant perception of their appearance.



This study will utilise new technology developed by Olivia Lockwood, Mark McEwen, Anne-Louise Smith and Robin Woolford in Flinders' Biomedical Engineering. The Tissue Indurometer will measure the amount of fibre in the tissues and provide an accurate indication of the level of lymphatic congestion.

Professor Piller anticipates that this study will help establish the Indurometer as a world leading surrogate measure of fibre in tissues. He also expects that participants in the study will achieve healthier skin and a better appearance, and that his findings will have important implications for combating the effects of ageing.

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Left: The Tissue Indurometer developed by Flinders' Biomedical Engineering

Optimising our multicultural nursing workforce

The multicultural feature of Australia's population is evidenced by the fact that 44% of Australians were either born overseas or have a parent who was born overseas. The nursing workforce has also become multicultural and approximately one in six nurses was trained outside Australia. While the diversity of the nursing workforce in a multicultural society is viewed as a strength in improving social cohesion and culturally competent nursing care, studies in Australia have identified cultural dissonance in health care

settings, which has a detrimental impact on the quality of care, patient safety, patient satisfaction and the harmony of nursing care teams.

Recently **Dr Lily Xiao** was awarded a Faculty Seeding grant to undertake a pilot project entitled 'Optimising the multicultural nursing workforce by facilitating transcultural nursing in an Australian public hospital'. This project is fully supported by Repatriation General Hospital (RGH) in South Australia. Research team members include

Associate Professor Eileen Willis, Ms Lesley Jeffers and Mr David Pickles. The purpose of the project is to develop, implement, and evaluate a transcultural nursing facilitation program at the RGH, using an action research approach. The study aims to achieve three objectives:

1. Establish a transcultural nursing facilitators' (TNFs) group at ward level
2. Provide a structured educational program for the TNFs group
3. Develop educational resources and structures to support the development of cultural competence for all nurses in the hospital.

It is anticipated that by equipping nurses with the leadership, attitudes, knowledge and skills necessary for patient-nurse and nurse-nurse intercultural encounters, this project will generate a positive impact on patient care by improving nurses' transcultural self-efficacy and building harmonious nursing care teams.

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Dr Lily Xiao, Associate Professor Eileen Willis, Ms Lesley Jeffers, Mr David Pickles

Celebrating success in the Faculty

Queen's Birthday Honours

Paddy Phillips: Public Service Medal

Andrew Tonkin: Medal (OAM) of the Order of Australia in the General Division

Malcolm Smith: Member (AM) in the General Division of the Order of Australia

ARC Linkage Project Grants

Julie Ratcliffe, Mary Luszcz, Maria Crotty, Jan Paterson: A health economic model for the development and evaluation of innovations in aged care: an application to consumer directed care, \$354,939 (plus \$180,000 partner contribution and \$36,000 in kind).

Department of Health and Ageing

David Currow: Clinical medication studies through Palliative Care Clinical Studies Collaborative, \$7,741,167.

Ann Roche: National Cannabis Prevention and Information Centre (NCPIC), \$100,000.

Obesity Prevention and Lifestyle (OPAL)

Lynne Cobiac, Jane Scott, Julie Ratcliffe, Lara Commane: Opal Evaluation, \$4,140,001.

SA Health

Correction - **Jane Scott, Kaye Mehta, Louisa Matwiejczyk, Fiona Verity, Gwyn Jolley, Courtney Ryder:** Fruit and Vegetable tender, \$1,094,475.

Angela Lawless: Health Lens Project Evaluation, \$86,881.

Sharon Lawn: Evaluation of SA Health Community Complex Case Management Program Phase 1, \$15,000.

Department of Health (Vic)

Sam Davis: Dementia - Friendly Environments Demonstration Projects in Rural Public Sector Residential Aged Care Services (PSRACS), \$134,332.

Australian Institute for Health and Welfare

Sophie Pointer: Australian Spinal Cord Injury Register work, \$70,000.

James Harrison: Supporting the topic Advisory Group - Australian Spinal Cord Injury and External Clauses ICD-11 development activities, \$27,595.

FaHCSIA – Closing the Gap

Malcolm Battersby and FHBHRU: Flinders Program for health professionals working with Aboriginal and Torres Strait Islander people, \$5,500,000.

Malcolm Battersby, Peter Stewart and FHBHRU: Flinders Program and chronic condition management, \$1,320,000.

Department of Veterans' Affairs

Malcolm Battersby, Sharon Lawn, Rene Pols, Peter Harvey, Richard Reed: Training and Resources in Chronic Disease Management for the Coordinated Veterans' Care Program, \$3,287,613.

Department for Transport, Energy and Infrastructure

Sophie Pointer: Mobility Scooters: Exposure to risk and psychosocial benefits of use, \$10,000.

Department of Further Education, Employment, Science and Technology

Wei Zhang: Secure an industry partner towards re-submitting a previously unsuccessful PSRF grant application on marine biotech technology, \$20,000.

Ophthalmic Research Institute of Australia

Jamie Craig, Jwu Jin Khong, Kathryn Burdon, Bastien Llamas, Angelo Tsirbas, Dinesh Selva, Alan McNab: A national registry of thyroid eye disease for genomic and transcriptomic studies, \$44,000.

Australian Primary Health Care Research Institute

Sharon Lawn, Linda Sweet, Malcolm Battersby, Timothy Skinner, Sharen Madden: Inter-disciplinary and cross boundary clinical information sharing in primary health care: how do they work and what are the outcomes for clients with chronic conditions and their health care providers? \$152,334.

Sunshine Coast Division of General Practice

Paul Ward: Evaluation of the SCDGP - NCACCH Indigenous Smoking Cessation Pilot Project, \$60,000.

The Lowitja Institute

Colin MacDougall, Kim O'Donnell, Judith Dwyer, Tracey Bunda, Angelita Martini: Aboriginal Community Controlled Health Organisations and Government Funders; Accountability to whom and for what? \$40,000.

Alzheimer's Australia SA

Sam Davis: Evaluation of Dementia Behaviour Management Advisory Services (DBMAS) South Australia, \$19,360.

Australian Lung Foundation

Rainer Haberberger: Interaction of Endothelin and Sphingosine 1-phosphate in lung inflammation, \$3,000.

Meat and Livestock Australia

Wei Zhang, Raymond Tham, Jingxiu Bi, Hu Zhang, Chris Franco, Julian Adams: Production of recombinant therapeutic proteins using in vitro culture of transient expression in primary cells from organs sourced from the meat processing industry - Phase 1, \$297,834.

CT Healthcare Pty Ltd

Neil Piller: Niagara Literature Review, \$15,062.



Tactile Industries

Neil Piller: Home based treatment for lymphoedema, \$172,000.

Faculty of Health Sciences Competitive Research Grants

Equipment Grants

Lynley Bradnam, Maria Crotty, Stacey George: Ancillary equipment to TMS unit to establish a Human Neurophysiology Laboratory, \$20,000.

Morton Burt, Cambell Thompson, Michael Ahern: FLIR T425 infrared camera, \$27,950.

Jillian Carr, David Gordon: Class II biosafety cabinet, \$10,500.

Michael Michael, Jonathan Gleadle, Keryn Williams: Nansight LM10-HSBF, Nanoparticle Tracking Analyser with Fluorescence, \$30,000.

Infrastructure Grants

Lynley Bradnam: Human Neurophysiology Laboratory, \$30,000.

Timothy Chataway: Mascot Data Server and PEAKS workstation computers / PEAKS software / quantitation node, \$38,228.

Shiwani Sharma: Purchase of a photo slit-lamp biomicroscope for examining eyes of laboratory animals for research, \$26,109.

Seeding Grants

Malcolm Battersby, Lucie Walters: Teleweb Flinders Program Pilot Study –extension, \$7,300.

Benjamin Blyth, Karen Lower, Pamela Sykes: Characterising the mechanism of β galactosidase expression in the pKZ1 model, \$13,000.

Jillian Carr: The role of sphingosine kinase 1 in dengue virus infection, \$16,000.

Peter Catcheside, Doug McEvoy, Karen Reynolds: A simple new treatment for obstructive sleep apnoea based on the mechanisms of naturally stabilised breathing in deep sleep, \$18,000.

John Coveney, Samantha Meyer: Out of the Box: What factors prevent families eating more fruits and vegetables? \$17,000.

David Gordon: Structure and Function of Factor XIII-B: New Functions for an Old Protein? \$15,000.

Pauline Guerin, Kerry Taylor, Dennis McDermott, Courtney Ryder: Closing the Evidence Gap: Moving beyond evaluation and anecdote in cultural safety training for the health workforce, \$15,000.

Ann Harrington, Anne Davies: The Culture and Spiritual life of older people in residential aged care, \$7,000.

Julie Henderson, Christine Wilson, Rebecca Munt: The role of social influences on adoption of lifestyle change related to diet and activity for people with type 2 diabetes, \$15,000.

Sara Javanparast, Lareen Newman: Human Milk Banking in Australia: Mothers' perceptions about the donation of breast milk and the acceptance of donated breast milk, \$12,000.

Penelope Lynn: Prevalence of slow transit constipation in the community, \$17,000.

Michael Michael, Jordon Li: Cytomegalovirus, Epstein-Barr and BK virus encoded MicroRNAs in renal transplant recipients, \$15,500.

Sophie Pointer, Clare Bradley: Mobility Scooters: Exposure risk and psychosocial benefits of use, \$6,970.

Rene Pols: A Qualitative Study Exploring the Relapse Process in Electronic Gaming Machine Gambling, \$10,000.

Ivanka Prichard, Carlene Wilson, Amanda Hutchinson: An investigation of the impact of social normative influences on health behaviours in new social environment, \$16,000.

Greg Roberts: A pilot study to inform the feasibility of a management approach combining pre-admission screening for diabetes and post-admission identification of stress hyperglycaemia in Vascular Surgery patients, \$16,000.

Courtney Ryder, Pauline Guerin, Dennis McDermott, Heather Burton: How much is Absorbed and Transformed? Assessing Transformative Unlearning in Cultural Safety Training within Indigenous Health Science Programmes, \$10,000.

Neil Sims, Hakan Muyderman: Glial cell reactivity and scar formation in the brain as targets for improving recovery following stroke, \$14,000.

Ian Spark, Timothy Chataway, Michelle Miller: The effect of different forms of exercise on the clinical, systemic and local biological responses in intermittent claudication, \$8,000.

George Tsourtos, John Coveney: Australian Migrants who are Resilient to Dietary Acculturation, \$12,000.

Paul Ward, Samantha Meyer, Maria Pulvirenti, John Coveney: Are patients with Type 2 diabetes who 'comply' with dietary recommendations more resilient?: a qualitative study, \$18,000.

Keryn Williams, Helen Brereton, Sonja Klebe: Anti-vascular endothelial growth factor-B as a biologic for treating eye disease, \$17,000.

Charmaine Woods, Simon Carney, Eng Ooi: Water flux through the nasal epithelium: implications for oedema and nasal secretions in chronic rhinosinusitis (CRS), \$14,000.

Lily Xiao: Optimising the multicultural nursing workforce by facilitating transcultural nursing in an Australian public hospital, \$16,000.

Miao Yang: The interaction between amyloid precursor protein (APP), p75NTR and sortilin: potential roles in generating APP C-terminal fragments and amyloid β peptide, and modulating Tau phosphorylation, \$11,000.

Tuck Yong, Campbell Thompson, David Ben-Tovim: Readmission of general medical patients, \$10,000.

Lana Zannettino, Charmaine Power: The Impact of Encampment on Domestic Violence in Australian Refugee Communities, \$14,000.



Top Up Grants

Kathy Arthurson: The Relocation tool kit: a guide for implementing relocation policies that enhance residents' health and well-being and social inclusion, \$8,000.

Rainer Haberberger: Salary support Sunil Tam Tam, \$20,000.

Damien Keating, Xin-Fu Zhou: Huntingtin-associated protein 1 controls cell communication, \$20,000.

Kathie Knights, John Miners: Angiotensin receptor blockers and aldosterone-breakthrough: A gene-environment interaction, \$18,000.

Mary Luszcz, **Michelle Miller, Ruth Walker:** How Individual and societal resources contribute to ageing well through the fourth age: The Australian Longitudinal study of ageing, \$10,000.

Peter Mackenzie, Robyn Meech, John Miners: Characterization of the novel drug and xenobiotic metabolizing UGT3A enzyme family, \$17,347.

John Miners: Drug glucuronidation: An integrated approach, \$20,000.

Nick Spencer: Ionic mechanisms underlying pain processing in the gastrointestinal tract, \$10,000.

Carlene Wilson, Paul Ward, John Coveney: Intergenerational transmission of dietary behavior, \$10,000.

Xin-Fu Zhou: Roles of proBDNF in nerve regeneration, \$10,000.

FMC Foundation Grants

Melissa Brown, Uwe Stroehrer: Examination of the motility, adhesion and biofilm characteristics of the nosocomial pathogen *Acinetobacter baumannii*, \$16,000.

Morton Burt, Stephen Stranks: Randomized-controlled study of isophane and aspart insulin versus glargine and aspart insulin to treat glucocorticoid-induced hyperglycaemia in hospitalized patients, \$16,000.

Carmine De Pasquale, Dani-Louise Dixon: Assessment of the salivary tripeptide, feG, for the treatment of cardiac ischemia-reperfusion injury, \$16,000.

Philip Dinning: Defining the mechanistic control of colonic motility, \$16,000.

Dani-Louise Dixon, Andrew Bersten: Can the salivary tripeptide feG ameliorate ventilator induced lung injury? \$16,000.

Jonathan Gleadle: Exosomes and vascular calcification in chronic kidney disease, \$10,000.

Ying Hu: Does form of ingested selenium significantly influence its efficacy and safety as anticancer agent? \$10,000.

Michael Jackson: A cell-based assay for detection of functional anti-muscarinic 3 receptor antibodies in patients with Sjogren's syndrome, \$15,000.

Sonja Klebe, Douglas Henderson: Silencing of Aquaporin 1 in Pleural Malignant Mesothelioma: Validation of the Usefulness of Aquaporin 1 Blockers for Treatment, \$10,000.

Richard Le Leu: Does red meat consumption increase the risk of colorectal cancer in inflammatory mouse model?: Regulation by resistant starch, \$11,000.

Peter MacArdle, Bryone Kuss: Modulation of CD20 antigen expression by Toll Like Receptor-7, \$11,000.

Anthea Magarey, Lynne Daniels, Rebecca Perry: Implementing NOURISH in the Community – Pilot study, \$10,000.

Samantha Meyer, Paul Ward, Simon Carney, Nicola Dean: A qualitative study investigating patient trust in a two-tiered healthcare system, \$16,000.

Hakan Muyderman: MND astrocytes the role of TDP43, \$15,000.

Mary Louise Rogers, Timothy Chataway, Robert Rush: A Biomarker for Motor Neuron Disease, \$16,000.

Shiwani Sharma, Kathryn Burdon, Timothy Chataway: Genetic and proteomic analyses in Fuchs' Endothelial Dystrophy, \$16,000.

Elke Sokoya: Cerebral vascular dysfunction in metabolic syndrome, \$14,000.

Vladimir Zagorodnyuk, Simon Brookes: Mechanisms of bladder sensory neuron sensitisation in bladder obstruction and cystitis, \$16,000.

Southern Knowledge Transfer Partnership Projects - Round Two

Peter Harvey, Mergho Ray: A peer led relapse prevention programme for problem gamblers: an interagency collaboration, \$9,660.

Sarah Mahoney, Sharon Goldman, Julie Ash, Michelle Campbell, Iris Lindemann, Helena Ward, Jane Hiatt, Chris Leach: Onkaparinga Clinical Education Program - Christies Beach High School Wellbeing Centre Groundwork Project, \$10,000.

Frank Tesoriero, Fiona Boyle: Promoting community leadership and sharing the learning, \$9,833.

Wendy Abigail, Charmaine Dennis: Research to practice: Sexual and reproductive health promotion for women, including over 30 years of age, \$10,000.

Eimear Muir-Cochrane, Graham Deakin, Jan Thompson, Pat Barkway, Deb O'Kane: The development of an innovative psychosocial training package for mental health nurses in Southern Mental Health, \$10,000.

Awards

John Miners: International Society for the Study of Xenobiotics Scientific Achievement Award.

Tim Chataway: National Science Week Unsung Hero of South Australian Science

Eimear Muir-Cochrane: SA Department of Health Nursing Excellence Award for Nursing Research.

Anthea Magarey: Honorary life member of Dietitians Association of Australia.

(Researchers from the Faculty of Health Sciences at Flinders University are listed in **bold type**.)

Research Pulse welcomes information regarding grants, awards and honours for publication in future issues.

My '3 minute thesis'

When Medical Biotechnology encouraged all its PhD students to take part in the three minute thesis competition I felt a brief moment of panic. How would I be able to successfully convey all this research into three measly minutes?

This exercise forced me to take a step back and see how my research fits in with the bigger picture as too often PhD students are confined to such a narrow field of research. The challenge lay in being able to make the audience relate to what I was researching and to maintain their interest for those short minutes. That meant cutting out all the fancy scientific jargon and converting my research project into an easy to follow story...

Within most plants lives a treasure trove of microbial species waiting to be discovered. In particular, the actinobacteria are highly sought after as they are responsible for producing many important antibiotics. Previous research has shown that actinobacteria isolated from healthy wheat tissue are potential biocontrol agents with the ability to protect plants against fungal and bacterial pathogens.

Funded by the Grain Research and Development Corporation, my research takes a closer look at the beneficial interaction between an endophytic actinobacterial strain and the model plant *Arabidopsis*. Using a proteomic approach, this work reveals how the actinobacterium is able to boost the plant's own defences to withstand pathogen attack. Understanding these mechanisms provides the means to developing the best strains to be used as inoculants in the field in order to reduce the use of chemical pesticides.

Normally, I come across as a quiet person, but I have "found my voice" and I know I have the unstinting support of my colleagues and supervisor, who have sat through numerous practise sessions, and who can probably recite my spiel as well as I can. All in all it is a rewarding experience and I would highly recommend other students to do the same. It is a great way to practise public speaking and promote the value of our research.

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Defence against chronic pain

Pain and chronic pain, after injury and nerve damage, are major health problems for society in general, but in particular for the defence community. Flinders University researchers **Associate Professor Rainer Haberberger** and **Dr Robyn Meech**, both based at the Flinders Medical Centre, have recently been awarded one of only eight highly competitive research grants from The Defence Health Foundation, in order to study the role of DNA in response to pain.

Pain is very individual; one person can often experience more pain than another in response to the same stimulus. Moreover, one person may develop chronic pain, whilst another person with the same injury does not. The reasons for this different susceptibility to developing long-lasting pain are unknown. Differences in the control of specific genes in nerve cells may play a role in determining people's pain perception, as well as the probability of developing chronic pain.

This research will study molecules that control the availability of genes for the production of proteins, and will compare these molecules in nerve cells from animals that are very sensitive to pain with animals that are not very sensitive to pain. By analysing how genes are regulated in specific parts of the nervous system after nerve injury, this research will reveal which gene-controlling molecules are involved. Understanding these mechanisms will contribute to the development of not only new diagnostic tools, but also aid in the identification of new treatment therapies for chronic pain, which are urgently required.

The Defence Health Foundation is a charitable trust which was established in order to fund medical research into issues affecting current and former members of the Australian Defence Forces and their families. Associate Professor Haberberger and Dr Meech were recently presented with their research grant by Foundation Director, Brigadier Gerard Fogarty.

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Associate Professor Rainer Haberberger and Dr Robyn Meech with Brigadier Gerard Fogarty

International accolades for John Miners

At a recent meeting of The International Society for the Study of Xenobiotics (ISSX), **Professor John Miners** was awarded the 2011 ISSX Asia Pacific Scientific Achievement Award. The ISSX is the largest society in the field of drug and chemical metabolism and pharmacokinetics.



Professor John Miners

The award recognises Professor Miners' outstanding contribution to the field through his seminal research on drug metabolising enzymes and their impact on drug therapy in humans. In particular, Professor Miners, who is a clinical pharmacologist, has made numerous breakthroughs in understanding how the body metabolises drugs and how combinations of drugs interact. He has written many highly cited research papers and is a member of the Editorial Boards of many of the world's leading pharmacology journals.

Professor Miners' early research identified factors that alter the efficiency of drug metabolism (i.e. the chemical 'breakdown' of drugs by the body) in humans and the influence this has on drug dosage in patients. His work was instrumental in understanding why certain combinations of drugs interact with others ('drug-drug interactions'), and how genetic and hormonal factors contribute to the variability in drug metabolism and response observed between patients.

More recently, Professor Miners' research has focussed on the two main enzyme families responsible for the metabolism of drugs and other chemicals, cytochrome P450 and UDP-glucuronosyltransferase. Professor Miners and his colleagues in Clinical Pharmacology have shown that these enzymes differ in their preference for drugs and in their susceptibility to drug-drug interactions and genetic variation. This has enabled them to develop experimental paradigms based on in vitro techniques that predict key aspects of the metabolism and pharmacokinetics of newly discovered drugs before they are administered to humans for the first time. These approaches are now widely used by the Pharmaceutical Industry in new drug discovery and development.

The presentation of this Scientific Achievement Award is testament to the impact of Professor Miners' research within this field.

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Queen's Birthday Honours for rheumatology researcher

Professor Malcolm Smith, from Clinical Immunology, was made a Member of the Order of Australia (AM) as part of the Queen's Birthday honours list announced in June 2011.

This award recognises Professor Smith's service to medicine in the field of rheumatology as a clinician, academic and researcher, as well as his contribution to professional organisations.

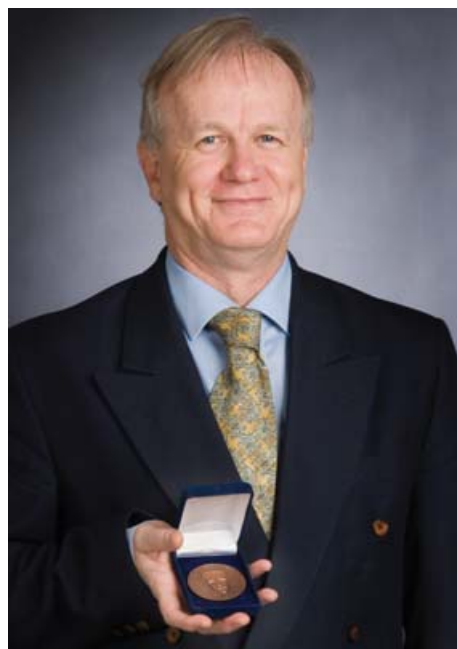
"I'm proud and humbled by this recognition and hope it will raise the profile of rheumatology as a specialty in the Australian community" Professor Smith said.

Spanning more than twenty-five years, Professor Smith's research career has focussed on understanding arthritis at

the level of the joint lining tissue. He has established a bank of joint lining tissue at the Repatriation General Hospital, which now supports research across Australia and around the world.

His research group is currently identifying appropriate treatments for rheumatoid arthritis. They are individualising treatments based on biopsy results from arthritic joints. This novel approach will take the guesswork out of managing rheumatoid arthritis and ensure patients are paired with effective treatments sooner. It is hoped that this will improve patient outcomes, result in more patients achieving remission and lead to more effective use of expensive and potentially toxic immunosuppressant drugs.

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Professor Malcolm Smith AM

Research Pulse is an initiative of the Faculty of Health Sciences at Flinders University.

Comments and suggestions for future articles are welcome.

Also available online: www.flinders.edu.au/health-sciences/research/pulse

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