

RESEARCH NEWSLETTER

FUTURE FELLOWSHIPS



The first round of ARC Future Fellowships has been announced by Minister Carr. This initiative will provide 1000 fellowships over a 5 year period. The first 200 such fellowships have been awarded. UNSW submitted 46 applications of which 15 were successful, 3 of those in the Faculty of Medicine. Melissa Green, Vanessa Venturi and David Wilson were successful in their applications for Future Fellowships and they are featured in this edition of the OMR Newsletter. Future fellowships aim to support outstanding mid-career researchers, who conduct research that is of high quality and innovative. They must have a record of excellent research outputs and the capacity for collaboration across industry and/or research institutes and disciplines. The ARC Fellowship Scheme supports researchers between 5-15 years since the award of their PhD or equivalent. The ARC selection criteria and salary levels for 2010 are available at the ARC Fellowship Scheme website: (http://www.arc.gov.au/ncgp/futurefel/FT09_selection_rep.htm). As applicants can only apply twice within a 4 year cycle, it is anticipated that there will be fewer applicants this year and this has been the case thus far in the Faculty of Medicine. It is thus important for mid-year researchers to consider applications for Future Fellowships. They should initially read the guidelines on the ARC website before discussing this with their supervisors/mentors and providing the Expression of Interest to the Office of Medical Research (w.wartha@unsw.edu.au).

In the 2009 round the age ranges for the fellowships were 30-34 years (15%), 35-39 year (36.5%), 40-44 years (33%) and 45-49 years (11%). No one under 30 years or over 60 years of age was awarded a Future Fellowship. Success rate for women was the same as that for men, i.e. 20.85%. Overall universities had a success rate of 20.4% with the Go8 having a success rate of 23.6%. MRI's had the highest success rate at 28.1%. There was an interesting distribution in terms of type of research activity, with the highest number of fellowships going to Biological Sciences (42), Medical and Health (37), Behavioural & Economic Sciences (8).

I would like to take this opportunity to congratulate our new Future Fellows and to encourage other outstanding mid-career scientists to consider applying for Future Fellowships. **Denis Wakefield**

From the Dean's Desk

The importance of having a comprehensive and Faculty wide Professional Development and Talent management Program to underpin our research activities was evident in the recent round of interviews for promotion. Seven of the eight applicants for promotion to Associate Professor was supported by the central research committee. The success was, in part, a reflection of the extraordinary talent of the researchers and teachers we have in the Faculty and the comprehensive and professional manner in which our applicants were prepared and mentored that obviously underpinned their successful applications.



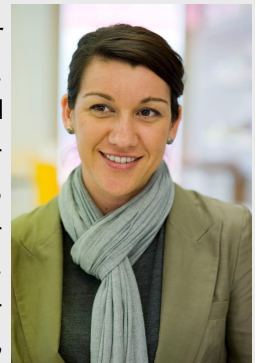
The Faculty has also had success with recently announced NHMRC Partnership Projects. Four of our top researchers—Associate Professor Alison Ritter, Professor Mark Harris, Professor Greg Dore & Professor Stephen Lord—were successful in obtaining grants. This resulted in a \$4 million increase in research funding to the Faculty in 2009.

"Nothing in life is to be feared. It is only to be understood." Marie Curie

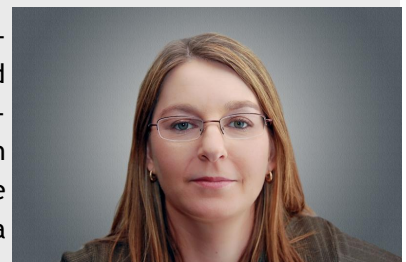
FUTURE FELLOWSHIP 2009 PROFILES

Dr Melissa Green leads a 'Cognition and Emotion' research group within the Black Dog Institute, and is Co-convenor of the "Cognition & Connectivity Research Panel" of the Schizophrenia Research Institute.

Melissa's research challenges the traditional separation of schizophrenia and bipolar disorder as distinct disease entities, on the basis of convergent evidence for shared genetic susceptibility to these conditions. Using multidisciplinary techniques, these emerging genetic commonalities are considered in the context of parallel evidence for shared (and distinct) cognitive and emotion processing impairments in these conditions. Specifically, the research examines hypotheses regarding the expression of cognitive and emotional dysfunction in association with shared vulnerability genotypes. Implicated genetic loci include polymorphisms on the Catechol O-methyltransferase (COMT) and Dopamine Transporter (DAT) genes (with effects on dopamine function in the pre-frontal cortex and striatum), and polymorphisms on the Brain Derived Neurotrophic Factor (BDNF) gene (associated with neuronal integrity, memory and emotional brain functions).. The research program integrates cognitive neuroimaging, physiological (salivary cortisol), and genetic data in large samples of schizophrenia, bipolar disorder, and healthy control participants. The results will advance our understanding of the biological basis of these conditions, to both aid the early detection of cognitive vulnerability to psychosis, and facilitate the development of pharmacological treatments that can be personalized according to genotype. The research involves collaboration between staff from UNSW Schools of Psychiatry and Psychology, the Prince of Wales Medical Research Institute, the Schizophrenia Research Institute, Australia, and Leiden University, The Netherlands.



Dr Vanessa Venturi is part of the Complex Systems in Biology Group in the Centre for Vascular Research. Historically, the development of T cell vaccines against chronic viral infections has focused on promoting T cell responses on the basis of their magnitude. However, recent progress in immunology has highlighted that the "quality" as well as the "quantity" of the T cell response is important for controlling viral infections. The "quality" of the T cell response is largely determined by the composition of the responding T cell receptor repertoire. The research of Dr Vanessa Venturi focuses on understanding the origins and evolution of the T cell repertoire during chronic infections and with age, as well as the role of T cell receptor diversity in immune responses. Dr Venturi has a background in theoretical atomic physics and over the past five years has applied her mathematical and computational skills to developing a unique interdisciplinary approach, integrating immunology, bioinformatics, biostatistics, and computational and mathematical modeling, to gain insights into fundamental immunological processes. Her research has important implications for the development of better vaccines against chronic infections and for improving our understanding of the compromise of immune responses in elderly individuals. Dr Venturi is collaborating on this research with several research groups, including researchers at UNSW, the University of Melbourne, the Vaccine Research Center at the National Institutes of Health and the University of Arizona in the USA, and Cardiff University School of Medicine in the UK.



Associate Professor David Wilson is Head of the Surveillance and Evaluation Program for Public Health at the National Centre in HIV Epidemiology and Clinical Research. He is coordinating a national surveillance system for monitoring numbers of diagnoses of HIV, viral hepatitis, and specific sexually transmissible infections in Australia. He is also an international leader in mathematical modelling of infectious diseases in order to understand key drivers of epidemics, explain past trends, and forecast the future trajectories of epidemics under different intervention strategies in Australia and Southeast Asia. He uses modelling, health economics, and impact evaluation to assess public health programs and interventions to inform population health policy. David and his team of researchers carry out studies in numerous countries including Australia, Thailand, Cambodia, Viet Nam, Indonesia, Papua New Guinea, China and the Philippines. His team also carries out capacity building in HIV surveillance and evaluation activities in the Southeast Asia region.



NSi Brokers Collaboration with Benitec to Develop an RNAi Therapeutic for Lung Cancer

In an exciting new development NewSouth Innovations Pty Limited (NSi), the commercial arm of the University of New South Wales, has negotiated a collaboration deal with Benitec Limited to support a proof-of-concept study for the development of a bIII tubulin RNA interference (RNAi) therapeutic for lung cancer. Benitec, an Australian biotechnology company and one of the pioneers of RNAi technology, has rights to commercialise the Michael Graham and Peter Waterhouse patent estates. As part of the collaboration deal Benitec signed a term sheet with NSi securing an option to licence patent applications arising from the Children's Cancer Institute Australia for Medical Research (CCIA) on bIII-tubulin as a target for knock down using RNA interference.

A/Professor Maria Kavallaris, Head of Pharmacoproteomics Program at CCIA has long been interested in the role of the tubulin/microtubulin system in mediating tumour resistance to chemotherapy. Two of the most clinically valuable classes of anti-cancer agents target the tubulin system: vinca alkaloids and taxanes. Build-up of resistance to these classes of drugs in cancer patients is associated with aberrant expression of b-tubulin isotypes in tumours, lending weight to the thesis that b-tubulin isotype expression has prognostic and theranostic value in cancer treatment.

Maria's team showed that targeting specific b-tubulin isotypes using RNAi sensitises cells to the anti-cancer effects of tubulin binding agents and DNA damaging agents, with different isotypes mediating selective responses to a range of clinically relevant drugs.

Since 2006, NSi has been working with the CCIA researchers A/Professor Maria Kavallaris and Drs Pei Pei Gan (PhD Scholar) and Joshua McCarroll (Research Officer) to protect and commercialise the intellectual property arising from this research program. In 2007 NSi partnered with a Californian biotech specialising in clinical isonostic assays based on proprietary technology in capillary electrophoresis to develop the diagnostic application.

In a serendipitous study in 2008, the CCIA team found that targeting bIII tubulin alone via vector expressed RNA interference mechanisms inhibited tumourigenesis in mice bearing H460 non-small cell lung cancer (NSCLC) clones, while targeting bII- or bIV-tubulin alone did not affect tumour growth.

"A/Professor Kavallaris showed that not only did turning off bIII-tubulin enhance the sensitivity to drugs which bind tubulin, but it also enhanced the sensitivity of drugs which bind to DNA. This significantly extends the potential of the RNAi approach to act as an adjuvant therapy for a range of chemotherapeutic drugs. This should be of interest to potential pharmaceutical company collaborators" said Sue MacLeman, Chief Executive Officer, Benitec Limited. The initial proof of concept work *in vitro* and *in vivo* has already been completed. Under the agreement, the CCIA team and Benitec will carry out further studies aimed at optimising the effect *in vitro* utilising Benitec's patented technology and targeting the constructs to lung tissue *in vivo*, with the aim of taking this to a Phase 1 clinical trial as soon as possible.

"We are very pleased to have identified two commercial partners for this patent family, one for the diagnostic application and now one for the therapeutic application. Advancing the two programs in parallel will strengthen the clinical development of the bIII RNAi therapeutic" said Laura Issa, Commercialisation Manager - Faculty of Medicine, NSi.

Lung cancer is the leading form of cancer worldwide in terms of incidence and mortality. NSCLC accounts for more than 80% of all lung cancers. First line therapy for NSCLC includes a combination of a tubulin-binding agent (TBA) (taxanes, vinca alkaloids) and DNA-damaging agents (platinums - cisplatin, carboplatin; doxorubicin; etoposide). The prognosis for patients with advanced NSCLC however remains dismal as the tumours rapidly become resistant to these drugs. Upregulation of bIII-tubulin is associated with clinical resistance to these drugs, which is what makes the Benitec-CCIA approach so promising.

"This is a very exciting development and demonstrates how research conducted at the laboratory bench can be translated into better outcomes for patients," said A/Professor Kavallaris.

NewSouth Innovations is committed to working with the Faculty to identify and develop new opportunities for technology transfer. Researchers are encouraged to contact Laura Issa at NSi at any time to discuss potential IP and commercialisation opportunities at l.issa@nsinnovations.com.au or 9385 5592.



Associate Professor Maria Kavallaris, Head of Pharmacoproteomics Program, Children's Cancer Institute Australia for Medical Research and Dr Peter French, Chief Scientific Officer, Benitec Limited.

Professor Henry Brodaty, from the School of Psychiatry, has been honoured with a major international award for his services to the field of psychogeriatrics.

Henry was selected to receive the 2009 Distinguished Service to the Field of Psychogeriatrics Award for his work over many years to improve the mental health of older people around the world.

The board of directors of the International Psychogeriatric Association (IPA) says recipients of the award demonstrate inspiration, leadership, vision, ethics, innovation, organizational development and motivation in the discipline of psychogeriatrics.



At Your Service: Chris Riordan

As administrative assistant to the Departments of Physiology and Pharmacology much of my work involves general administration for the Heads of Department, Margaret Morris and Gary Housley. I also act as minute secretary to BRAG (Biomedical Resources Advisory Group) whose members represent schools and research centres across the Faculty. BRAG is an advisory group to Prof. Denis Wakefield, the Associate Dean Research.

The group supports and provides input to the development of animal facilities and core research facilities, such as the small animal imaging unit and the Biomedical Imaging Facility. The spread of members across the Faculty aims to foster co-operation and collaborations to provide researchers with the imaging tools needed to support their research. As minute secretary I liaise with leading members in time-tabling meetings, sending out agenda, minutes and related documents as well as attend meetings. Website: <http://www.med.unsw.edu.au/medweb.nsf/page/BRAG>



How Can I Help?

Each month we will profile members of the Faculty's staff who can help you with various aspects of your research. This month's profile is of

Tony Gardner, Faculty Finance Manager

Tony is a Chartered Accountant who provides financial and accounting support within the Faculty of Medicine. The current UNSW Finance focus on improving the financial reporting, understanding and accountability to Faculty and School/Centre level is a key element of the role. Budgeting, forecasting and Higher Education Research Data Collection (HERDC) as well as financial transactional activity and processes fall within the role.

Tony commenced at UNSW in 2003 at UNSW Global and moved into the Faculty of Medicine as a client services accountant (CSA) in 2007. Initially as the assistant CSA, Tony stepped into the senior role and subsequently to the Finance Manager role in May '08. The CSA staff (2) were recently transferred to join the Management Accountant and Finance Officer as direct reports to Tony.

The Finance unit can assist you with enquiries on regular Research Statement (email monthly to the Project Manager) and any other finance matters. Tony can be contacted on (02) 9385 2703 or via email (t.gardner@unsw.edu.au) .

UNSW Library

UNSWorks and simplified deposit procedures : Robyn Drummond

The Library has developed an editing tool that will enable academic staff to easily edit their citations in UNSWorks. These citations can be downloaded from Research master (HERDC Collection) into UNSWorks upon request. After editing a citation/s the staff member can then upload their postprints into UNSWorks.

This should assist the Faculty in meeting the emerging requirements of the NHMRC regarding the dissemination of research findings. The Library understands that it will shortly become mandatory to deposit publications arising from NHMRC funded research into an open access repository, in line with other international funding bodies such as the NIH and the Wellcome Trust. For additional information please contact your Outreach Librarian.

Deadlines

Faculty Research Grants/Early Career Researcher Grants: Please forward electronically to Wendy Wartho at w.wartho@unsw.edu.au by 29 October 2009. Website: <http://www.med.unsw.edu.au/medweb.nsf/page/researchne#m3>

Dean's Award and Dean's List:

Due by the 31 October. The guidelines for nominating staff and students for these awards have recently been posted on the Faculty website which should be consulted for further information - <http://www.med.unsw.edu.au/medweb.nsf/page/deansawards>.

ARC Future Fellows: Next round will open Feb 2010 and close April 2010.

ARC Discovery: Open Dec 2009 and close March 2010.

ARC Linkage: Open March 2010 and close May 2010.

Publications of the Month

Prince of Wales Clinical School

"Oxaliplatin-induced neurotoxicity: changes in axonal excitability precede development of neuropathy"

S B Park, C S-Y Lin, A V Krishnan, D Goldstein, M L Friedlander, M C Kiernan
Brain 2009, 1-12

School of Medical Sciences

"Rapid Somatic expansion causes the brain to lag behind : The case of the brain and behaviour of new Zealand's Haast's eagle"

R P Scofield and K W S Ashwell
Journal of Vertebrate Paleontology 29(3)
637-649

HEART FOUNDATION RESEARCH FUNDING INFORMATION SESSION

Are you looking for funding for your cardiovascular research?

Come and find about how you can obtain funding for your research from the Heart Foundation.

Details for this session:

Venue: Australian School of Business, Cats Room 119, UNSW

Date: Monday 26 October 2009

Time: 3.30pm – 4.30pm

To register for this session please visit www.heartfoundation.org.au/information_sessions

CONTACT DETAILS

Office of Medical Research, Faculty of Medicine, contact: Wendy Wartho Tel: 02 9385 8210, Fax: 9385 1442 or Email: w.wartho@unsw.edu.au