Menzies Research Institute Tasmania

Bulletin 72

spring 2012

Menzies appoints new Director: Professor Tom Marwick

Professor Tom Marwick

The directorship of Menzies Research Institute Tasmania is among the most important leadership roles in medical research in Australia. With that in mind, a rigorous global search to find a leader to advance Menzies in its next phase of development was carried out.

Menzies is pleased to announce that Professor Tom Marwick will return to Australia from the USA to take up the appointment of Director of Menzies in October this year.

Professor Marwick is currently Section Head, Cardiovascular Imaging, at the Center for Cardiovascular Imaging at the Cleveland Clinic, Ohio. He is a cardiologist with a strong interest in research directed at practical health outcomes. His particular expertise is cardiac imaging in heart failure and coronary disease and the detection of early stages of cardiac dysfunction.

Professor Marwick will bring with him a wealth of experience, knowledge and expertise in medical teaching and research. He has an outstanding record in both research and research leadership in Australia and internationally.

Professor Marwick has a long and distinguished career in cardiovascular health and research since his graduation with honours from the University of Melbourne in 1981 with a degree in Medicine. He completed his PhD in Cardiovascular Imaging at the University of Louvain in Belgium in 1994 and a Masters of Public Health in 2011 at the Harvard School of Public Health in Boston, USA.

Last year Professor Marwick was invited to give the Kempson Maddox Lecture, the Cardiac Society of Australia and New Zealand's premier annual oration.

Other career highlights to date include winning his first program grant from the National Health and Medical Research Foundation in 2009, the culmination of a decade's work in his field, and winning the Foundation's Eccles Award (named after the Australian Nobel Prize-winner Sir John Eccles) in 1999.

Professor Marwick will continue his clinical work in Tasmania, which includes devising methodologies for the selection and matching of patients to heart treatments, according to risk. His role as a clinician will strengthen our ties with hospitals in Tasmania and our work in translational medicine.

Professor Marwick is excited at the opportunity to head up Menzies.

"As an Australian academic, I am very familiar with the profile and recognition of the Institute, and my visits have left me impressed with the strength of the research groups, the infrastructure, and the growth that Menzies has enjoyed over the last few years," Professor Marwick said.

"Menzies is a medical research jewel in Australia, with the ability to perform high quality basic, clinical and population health research in an environment where the community and government are engaged and supportive.

"Menzies is already a powerful force in easing Tasmania's disease burden. I am very keen to maintain the status of the Institute as a go-to resource for addressing health problems that are pertinent to Tasmania," he said.

With stage two of the Medical Science Precinct well underway, this is an opportune time for our new Director to be joining us. We look forward greatly to him leading Menzies in the next phase of development.

What's inside

Director's message

Professor Alison Venn, Acting Director

Welcome to the Spring edition of the *Bulletin* newsletter 2012.

The past few months have been an exciting time for Menzies. As well as important breakthroughs, such as the recent MS discovery that you can read about in this issue, we have appointed our new Director, Professor Tom Marwick. As you will read, Professor Marwick has an impressive and extensive CV. We are very excited by his appointment and look forward to Professor Marwick coming on board in October.

A particular highlight in June was a visit by Tasmanian-born Professor Elizabeth Blackburn, the first Australian woman to win a Nobel Prize. The University of Tasmania held a special event at Menzies, where Professor Blackburn was presented with an honorary doctorate for her outstanding contribution to research and science. We were pleased to be able to guide Professor Blackburn on a tour of our world-class laboratory facilities.

As many of you would already know, the Institute has been undergoing a major redevelopment that includes adding a new building to our site and almost doubling the institute's floor space. We are getting very close to receiving occupancy of the building, with some staff relocating in early September. The new building will signify the further expansion of our research programs into cancer, dementia, cardiovascular disease, MS and many other diseases that burden our community.

Thank you for all your ongoing support of our work. We deeply appreciate it, as do those in the community who benefit from our research.

Kind regards,

Alison Venn

Professor Alison Venn
Acting Director

New link between MS treatment and vitamin D

The study provides further support for persons with MS to regularly have their vitamin D measured, especially in winter

Menzies researchers have found that a common MS treatment may increase vitamin D levels.

It is generally thought but not proven that increasing your vitamin D levels reduces the risk of getting MS and that higher levels of vitamin D are associated with a lower relapse risk in patients with MS.

Menzies researchers have now discovered that people on the MS drug, interferon-beta, absorb up to three times as much vitamin D from the sun as those not on the treatment or on other MS treatments. This observational study was recently published in the journal *Neurology*.

Around 60 per cent of MS patients with the relapsing-remitting form of MS are treated with interferon-beta. It is derived from a naturally occurring component of the human immune system and has been found to reduce the frequency of relapse (attacks) and other symptoms of MS.

The study used data from the MS Longitudinal Study, from 2002–2005, and this analysis used data from 178 persons with MS living in southern Tasmania.

Menzies researchers Dr Niall Stewart and Dr Steve Simpson, Jr. were co-first authors on the paper.

Dr Simpson says the findings suggest that part of the therapeutic effects of interferon-beta on relapse in MS may be through its effects on vitamin D, since vitamin D has the ability to reduce inflammatory pathways in the immune system.

"Not only did we find that persons taking interferon-beta had higher vitamin D levels than those not taking it, we found that the drug was only clinically effective among persons with vitamin D sufficiency, suggesting part of the mode of effect of interferon-beta may be via its effects on vitamin D."

Senior author, Professor Bruce Taylor, says the new findings have the potential to markedly affect clinical practice in the treatment of MS, but cautions that randomised controlled trials are needed to prove these associations.

"We are currently looking to undertake such a clinical trial in the future," Professor Taylor said.

"This study does, however, provide further support for persons with MS to periodically have their vitamin D measured and kept in the sufficiency range, especially in winter.

"We know that relapses or attacks occur more frequently in winter and in spring when the vitamin D level is lower, even in people who are on these drugs.

"If we could keep a person's vitamin D levels up, we may enhance the effectiveness of the drug and prevent those attacks."

Welcome home to **leading neuroscientist**

Menzies is delighted to welcome back to Tasmanian shores leading neuroscientist, Dr Kaylene Young. Dr Young, who is originally from Hobart, returned home in May, to continue her outstanding career in medical research.

Dr Young has clocked up an impressive amount of experience and expertise in neurodegenerative disease research, both nationally and internationally, since she left Tasmania 15 years ago. Her work has been published in a number of notable international journals including: *Journal of Neuroscience*, *Nature Neuroscience* and *Neuron*.

After completing her PhD studies at the Walter and Eliza Hall Institute (WEHI) in Melbourne, she spent 18 months assisting in the establishment of the Queensland Brain Institute (University of Queensland). Dr Young then moved to the United Kingdom in 2004 to work as a postdoctoral research fellow at University College London (UCL). In 2008 she was awarded a career development award in stem cell research at UCL.

Dr Young joined Menzies in 2011, but having been successful in her application for an international project grant, spent the first year of this position conducting electrophysiological experiments at UCL.

Dr Young returned home to Tasmania after 15 years away pursuing a career in medical research

Since returning to Tasmania, Dr Young has been busy establishing the Glial Research Team at Menzies, working alongside the current Neurodegenerative Research Group. Together the teams will form the Laboratory of Molecular Neurobiology.

Dr Young's research team will focus on understanding the plasticity inherent within the adult central nervous system (CNS), and investigate possible ways to harness brain stem cells for CNS repair.

"We have a number of projects underway that examine the addition of new cells to the adult brain. We are mostly looking at replacing cells that die or are damaged as a result of brain injury (stroke or trauma) or neurodegenerative disease such as Alzheimer's disease or multiple sclerosis," Dr Young explains.

"Nerve cells in the brain have long processes that span large distances in order to transfer information between brain regions. As the brain is electrically active, these processes need to be insulated, much like an electrical cable.

"Our recent work has opened a new and exciting avenue for our research, by demonstrating that the pattern of brain insulation changes over our lifetime. Changes of this sort can alter information transfer speeds, and may represent a novel, previously neglected form of brain plasticity (remodelling) that could be as significant to brain function as the addition of new cells."

Menzies hosts leading professors from China

Collaboration plays an important role in the Institute's innovative research. Menzies has a number of key international collaborations with researchers and institutes around the world including Anhui Medical University, China.

Menzies' Professor Changhai Ding (bottom far left) with the visiting professors from AMU

Anhui Medical University (AMU) is one of the oldest educational institutions in Hefei, Anhui province, which is located in the east of central China and honoured as "the city with State Innovation of Science and Technology". There are more than 17,000 students studying at AMU and the researchers from this university have an international reputation in areas including dermatology genetics, epidemiology and pharmacology.

A number of leading professors from AMU visited Menzies recently to experience first-hand the facilities we offer and to meet with a number of our senior researchers and share knowledge. The group attended English language classes at the University of Tasmania while they were visiting and took time out to visit some of Tasmania's top tourist attractions.

Prof Sen Yang, Director of the Institute of Dermatology, Prof Dongqing Ye, Epidemiology, Director of Strategic Development Department, Prof Fengli Xiao, Dermatology Professor and Vice Director of Teaching Affairs Department, Prof Qiang Wu, Pathology Professor and Dean of International Education School, Prof Cheng Huang, Associate Professor of Pharmacy, and Ms Yan Xu, English Language Lecturer, arrived in mid-July and stayed until August/late-September.

Earlier this year Professor Alison Venn, Acting Director of Menzies, Professor Peter Frappell, Dean of Graduate Research, UTAS and Associate Professor Changhai Ding visited AMU. A scholarship program was then set up between Menzies and AMU to enable ten AMU postgraduate students to come to Tasmania and undertake their PhD studies. The scholarship program will commence later this year.

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Thank you to all of our donors for your ongoing financial support and commitment to Menzies.

Listed below are **new** individual and community supporters of Menzies for May to July 2012.

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A full list of all our supporters for 2012 is available on our website under www.menzies.utas.edu.au/our-supporters. Thank you.

Researcher profile: Professor Heinrich Korner

Professor Heinrich Korner

What is the current focus of your research?

We work in the area of immunology, which is the study of our immune system. Our immune system protects us day and night from life-threatening infections. If our immune system fails, diseases result. There are very few diseases that do not involve the immune system, and many therapeutic approaches are aimed at boosting the immune response.

We work in two different fields of immunology. The first field looks at the role of cell movement in the development of autoimmunity. Autoimmunity is when our immune system makes a mistake and attacks the body's own tissues or organs.

The second field examines the activity of cytokine in an infectious disease. Cytokine are proteins secreted by cells of the immune system that serve to regulate the immune system.

We are also currently applying for funding to investigate some immunological aspects of multiple sclerosis (MS).

What are some of the recent findings from your work?

We recently found that a cell surface receptor, known as CCR6, is responsible for a check point that controls the communication between different cell types. Without this check point the control of the production of antibodies is not as effective and tight as it should be. While you start to make more antibodies without this receptor, those antibodies are not as good. This could potentially have some disadvantages for you and could assist in the development of autoimmune disease.

In another project we are working with a parasitic pathogen, *Leishmania major*, which causes a nasty skin infection named leishmaniasis that can turn deadly when the parasite spreads. We are analysing a cell population which gathers in our infection model when a part of the immune system has been deactivated. This new cell population could contribute to the serious outcome of the disease in our model.

What is the biggest challenge in your area of research?

Science has a lot of fundamental challenges, but the most difficult problem is getting ongoing funding that allows my group to work for a longer period of time without constantly changing staff.

What is the most interesting aspect about your work?

To be able to work on important health problems and to be free to choose my own topics.

What do you enjoy doing in your spare time?

Right now it is the middle of winter in Tasmania, so I am enjoying wood splitting. Generally, I love to walk my dog and do some gardening.

Cancer genetics student wins ASMR award

Menzies' PhD student, Nick Blackburn, was recently named the winner of the Australian Society of Medical Research (ASMR) student awards (Tasmania) for 2012.

Nick is currently studying under the leadership of Associate Professor Jo Dickinson in the cancer genetics group. His thesis is looking at identifying susceptibility genes for familial blood cancers.

Menzies' PhD student, Katherine Southam, was announced as the runner-up for 2012. Katherine is undertaking her PhD into the causes of neuron degeneration in Motor Neurone Disease under the leadership of Associate Professor Tracey Dickson.

There were close to 30 student applicants and the panel was extremely impressed with the high quality of applicants.

Medical Science 2 update

Construction is still on track for the completion of the Medical Science 2 (MS2) building. Levels 1–3 of MS2 will be available for occupation by September 2012. Levels 4–6 will be ready for occupancy by the end of the year. Relocation of some staff into MS2 will start as early as the first week in September.

Left: Interior MS2 shot showing fit out and finishes on level 3, which will primarily be office space

Right: Current construction work showing the outside glassed stairwell that will unite MS1 and MS2

Research, Sherpas & yaks

In May this year, two Menzies PhD students Rachel Clime and Martin Schultz, along with ten study volunteers, headed for Nepal to take on some of the world's biggest mountains and undertake a blood pressure (BP) research study.

Along the way, the group experienced the amazing culture of the Sherpa people, passing by many small villages, climbers, and countless yak trains porting supplies ever upwards.

The group faced high altitude hypoxia (insufficient levels of oxygen in blood and tissue) which is generally the cause of severe mountain sickness (AMS), which almost every 'lowlander' will experience to some extent when climbing to elevations above 3000 metres. The group encountered first-hand the effects of AMS including fatigue, headache, insomnia, nausea and shortness of breath.

Existing research is unclear with respect to changes in BP as a result of high altitude hypoxia, and BP has not been shown to be related to symptoms of AMS.

Currently, the BP research group at Menzies is looking at alternative ways of measuring BP. It is now well understood that BP taken in the traditional manner from the upper arm is not reflective of BP at the heart (central BP), and may differ greatly between individuals with the same upper arm BP.

Additionally, ambulatory BP (BP and heart rate measured regularly over 24 hours) provides a greater representation of the chronic daily stress placed on the organs than the traditional manner from the upper arm.

PhD students Martin Schultz and Rachel Clime travelled to Nepal earlier this year and carried out high altitude BP research

"The main aim of our research in Nepal was to examine the response of these new BP variables and their relation to AMS," Rachel Clime said.

"Nepal and the trail to Mt Everest base camp provided us with the perfect backdrop for our high altitude BP research.

"This study provides us with the first pilot data about the central and ambulatory BP response to high altitude hypoxia.

"Our findings deliver novel information on the physiological responses to altitude, which will benefit the scientific community and 'lowlanders' wishing to travel to high altitude areas."

Making time for tea and charity

The Sandford Morning Tea Group is a wonderful group of friends in the Sandford area who each month get together for a fundraising morning tea. Each person brings a plate of food and five dollars to contribute to a charitable cause. The host for the month selects which charity will receive the group's contribution for that month.

The group started in July 2005 and has met monthly ever since. So far, the group has raised over $7000 in funds. Their criteria for the recipient of the funds is that the funds remain in Tasmania and go directly into supporting people who live with a chronic disease such as prostate and breast cancer, cystic fibrosis, Parkinson's disease, Alzheimer's disease, asthma, and motor neuron disease.

The Sandford Morning Tea Group getting together for a good cause

The Sandford Group supports research at Menzies, as well as other not-for-profit organisations in areas that have a particular resonance with members.

There are more than thirty people in the group and in the warmer months it is common to have a full turnout, though in winter the numbers go down slightly.

The group was started up by Sue Lyden and a friend Lyn Sell who realised that there were so many not-for-profit organisations in Tasmania that were trying to survive and help as many people as they could in the community. Sue says, "It's great to know where the funds raised are going and that we are providing valuable support where it's needed."

If this story has inspired you to hold your own fundraising event for Menzies, please contact Phoebe Sargent on 03 6226 7707 or phoebe.sargent@menzies.utas.edu.au for more information.

Art of Christmas 2012

We are delighted to invite you, your friends and colleagues to Menzies' major fundraising event – the *Art of Christmas* on Wednesday 24 October, 6–8pm at the Long Gallery, Salamanca.

Artwork by renowned Tasmanian artist Katy Woodroffe

We are excited to announce that new Director, Professor Tom Marwick, will open the evening.

This year's event has a wonderful line-up of artists including Raymond Arnold, Michael Schiltz, Max Angus, Katy Woodroffe, Patrick Grieve, Todd Jenkins, Nick Glade-Wright and many more.

This year we are delighted to welcome on board Mona as a major sponsor of the event.

Artwork will also be available for viewing at the Long Gallery from Wednesday 24–Sunday 28 October.

Tickets are on sale now! Tickets $35 each. Book your tickets before 5 October to receive the early bird special price of $30.

To buy tickets please contact Kathryn or Lydia on 6226 7700 or email Reception.MSP@utas.edu.au

Please support our research by joining us for this fabulous cocktail-style evening of fine art, food, wine and entertainment.

For further information visit www.menzies.utas.edu.au/art-of-christmas-2012

Public lectures

Multiple Sclerosis (MS) Research

5.30pm, Wednesday 21 November
MS1 Lecture Theatre
17 Liverpool Street, Hobart

A free public talk for anyone interested in learning about the important MS research we are currently undertaking in the prevention and management of MS.

Chair: Professor Bruce Taylor

Presenters: Dr Ingrid van der Mei and Dr Steve Simpson, Jr.

For further information please see www.menzies.utas.edu.au/public-lectures

Doors open 5pm with light refreshments available. Enter building on corner of Liverpool and Campbell Streets and report to main reception.

MB65601

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In Memoriam
May 2012 – July 2012

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