



News, Research and People

December 2011

M3



Monash reshaping
primary healthcare
in China

From the Dean

December marks the end of another year of evolution within the Faculty of Medicine, Nursing and Health Sciences. Over the past twelve months there have been changes in personnel, new cohorts of students, more graduates entering the ranks of our alumni. There have been discoveries through research, and the award of grants enabling even more important research. We have seen the introduction of new technologies. And in 2011 Monash has been honoured with the Co-Presidency of the World Health Summit, held in Berlin during October (featured in next edition, Ed.).

Our Deputy Dean – International, Professor Shane Thomas is a man of many diverse talents. In November, Shane's guidelines for the diagnosis and treatment of problem gamblers was launched by the Victorian Minister for Gaming, Michael O'Brien. Behavioural change research by Shane extends to the way that doctor-patient relationships develop, and this has formed the basis of exciting collaborations in China with our M8 Alliance partner, Peking Union Medical College, and with Peking University and local health authorities in Beijing and Shenzhen. Shane is quite a Sinophile as you will discover in this edition of *M³*.

The work of MODI: the Monash Obesity and Diabetes Institute is highlighted through Professor Michael Cowley's elevation to Fellow of the Australian Academy of Technological Sciences and Engineering, and through research



outcomes under the leadership of Professor Tony Tiganis, reflecting the breadth of MODI's work in the fight against obesity.

An iconic figure within the Faculty family, Professor Bruce Tonge was farewelled by the School of Psychology and Psychiatry with a special forum celebrating Bruce's career while simultaneously providing a platform for discussion of contemporary issues in developmental disorders.

To those who know Bruce, it could only be appropriate that even his departure brought a future focus to the event recognising an illustrious career spanning five decades.

May I extend my best wishes to you all at the end of another exciting year for the Faculty, and for a safe and happy new year as we prepare for 2012. *M³*

Christina Mitchell
December 2011

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From the cover:

Monash reshaping
primary healthcare
in China



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‘If you can imagine it, you can do it...’

The Monash China Health Initiatives Team is reshaping primary healthcare in China on a massive scale.

Over the last five years academics from the Monash School of Primary Health Care, Professor Shane Thomas, Professor Colette Browning and Dr Hui Yang, have been collaborating on health system reform with the China Ministry of Health, Peking University and Chinese hospital networks.

Until ten years ago, Shane Thomas had never been to China. Today, he is highly recognised thanks to his work in Primary Care and Chronic Illness Management in the Chinese health system.

Professor Shane Thomas is Deputy Dean (International) and Professor of Primary Health Care Research in the School of Primary Health Care. His interest in China grew from the many Chinese students he had taught, and in 2003 he was invited by a former student, a hospital CEO, on his first visit to the country. Since then, Professor Thomas and the Monash China Health Initiatives team has visited China more than 35 times and their interest and expertise in primary healthcare has contributed to the reform of the Chinese medical system and improvement of hospital quality.

When Professor Thomas first visited China, he discovered that many of the facilities and services offered by Chinese hospitals are of first world standard. “The quality of the Chinese health system is very good and the available facilities and services in the capital cities are as good as those in Australia,” says Professor Thomas. “In terms of clinical experience, the average graduating Chinese doctor



has had as much and sometimes much more clinical experience than the average Australian graduating doctor.”

However, what surprised Professor Thomas is that most Chinese doctors are trained to be specialists. “In terms of being community doctors in primary care, they’re not particularly trained to do that. That is why they are interested in us because in Australia we do this very well. We have a big primary care component of our medical workforce, for example, in general practice.”

One of the most noteworthy improvements Professor Thomas is responsible for is the introduction of a patient experience monitoring system in Chinese hospitals. This unique system of collecting patient feedback, developed by Professor Thomas, is used to improve hospital

quality through benchmarking patient experiences. In collaboration with the Department of Hospital Management of the elite Peking University, many of the large hospital networks in China now use the system to benchmark and improve patient experiences.

“In terms of numbers of people involved, it’s a very large study,” says Professor Thomas. “Across the hospital networks, each hospital in the network interviews 800+ patients. So the study sample is substantially larger than anything we could do in Australia. This is another reason why I like working with the Chinese. They just do it. They just think, ‘this is good, so we’ll do it.’”

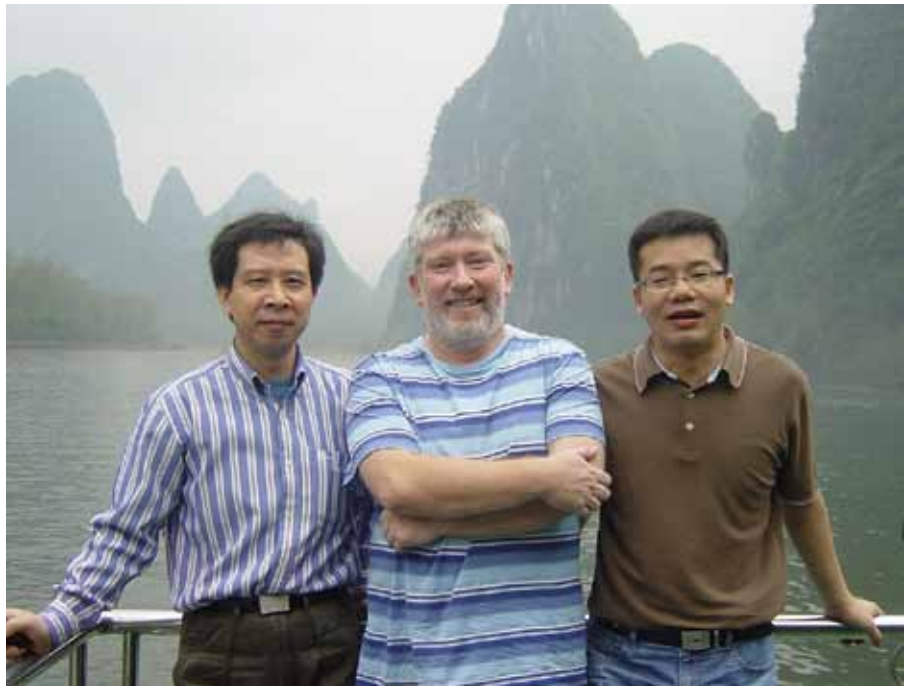
Chronic Illness is another area of health where the Monash China Health Initiative has made a significant impact.



“This is a high profile program...this is why we are well respected in China.”

With 90 million people in China suffering from diabetes, the demands on the health system are enormous. Many chronically ill patients are best treated in a primary care or community setting, however China’s primary healthcare system is still evolving and developing. “What we’re doing is assisting the Chinese with the development of chronic illness management interventions that fit into a primary care setting,” Professor Browning says.

Led by Professor Browning the team developed a chronic illness management system, known as ‘The Happy Life Club’™. The Happy Life Club™ trains doctors and nurses to change the behaviour of people with diabetes and other chronic conditions such as heart disease through the use of motivational interviewing techniques. Initially the Happy Life Club™ intervention was conducted in Fangzhuang, a large residential area of Beijing. The program has now extended to the larger Fengtai district of Beijing with plans for further extension to other Chinese cities and regions including Malaysia and Hong Kong. “The Happy Life Club™ has the



formal support of the Chinese Ministry of Health and will soon be delivered to 20,000 participants in a large-scale clinical trial,” says Dr Hui Yang.

Professor Browning has witnessed the positive health and wellbeing changes in Chinese patients. “We had a big public meeting with people who had been involved in The Happy Life Club™. It was incredibly moving to hear people talk about how the quality of their lives had improved because of their behavioural changes in managing their illness.”

The Chinese government is so pleased with the results that The Happy Life Club™ was the only featured health project in the 60th anniversary celebrations of the People’s Republic. “This is a high profile program,” says

Professor Thomas. “This is why we are well respected in China.”

When asked about the challenges of working in China, Professor Thomas says it’s often easier to achieve results there than in Australia. “I like China because you can get things done. If your idea is credible and feasible, and if you have the right connections and relationships, you can get things done. It doesn’t necessarily always work like that in Australia.”

There is no doubt that the Professor Thomas and his collaborators have made a significant and positive impact on the Chinese health system. “This is a truly collaborative effort and a win-win for the Chinese and us,” says Professor Thomas, “and we are making a difference through high quality science.” M³



Another clue to how obesity works

The effects of obesity – both on our bodies and on the health budget – are well known, and now, scientists are getting closer to understanding how the disease progresses, providing clues for future treatments.

In a study published in the prestigious journal *Cell Metabolism*, researchers at Monash University in collaboration with colleagues in the United States, have revealed how resistance to the hormone, leptin, a key causal component of obesity, develops.

Lead author Professor Tony Tiganis of the Monash Obesity and Diabetes Institute and Monash University's Department of Biochemistry and Molecular Biology, said our bodies produce leptin in response to increasing fat deposits.

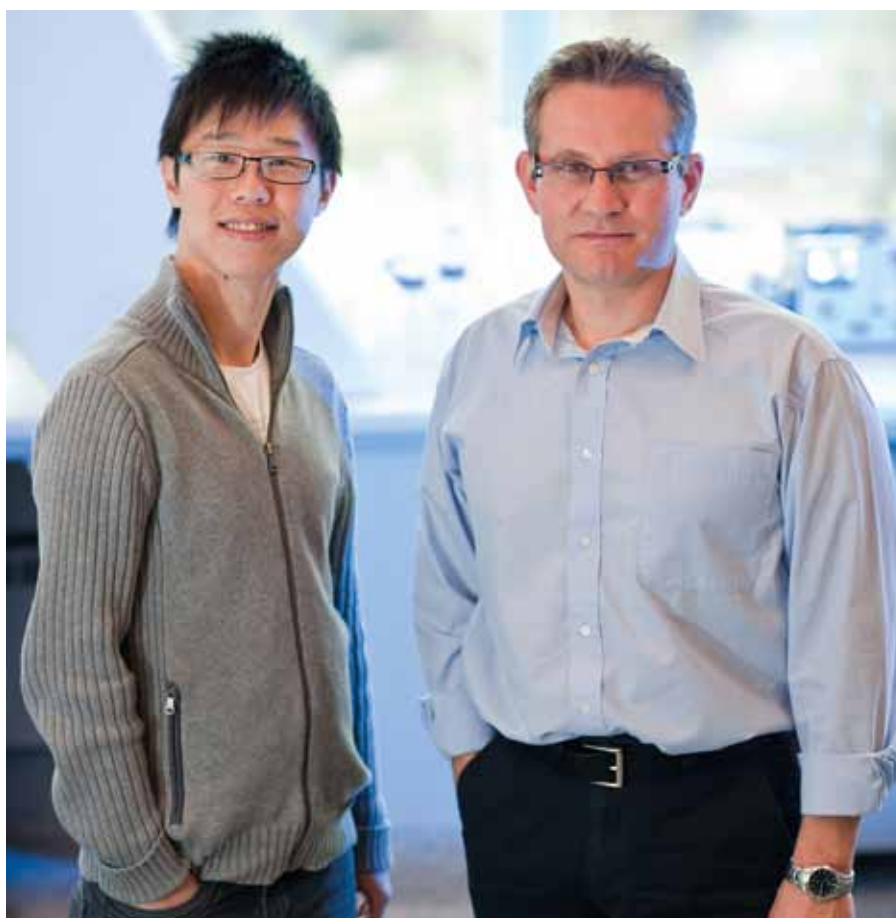
"Acting on a part of the brain called the hypothalamus, leptin instructs the body to increase energy expenditure and decrease food intake, and so helps us maintain a healthy body weight," said Professor Tiganis.

"The body's response to leptin is diminished in overweight and obese individuals, giving rise to the concept of 'leptin-resistance'. We've discovered more about how 'leptin-resistance' develops, providing new directions for research into possible treatments."

Two proteins are already known to inhibit leptin in the brain and Professor Tiganis' team have discovered a third. In mice, this third protein becomes more abundant with weight-gain, exacerbating leptin-resistance and hastening progression to morbid obesity. The study showed that the three negative regulators of leptin take effect at different stages, shedding light on how obesity progresses.

"Drugs targeting one of the negative regulators are already in clinical trials for Type 2 Diabetes, however, our research shows that in terms of increasing leptin-sensitivity in obesity, targeting only one of these won't be enough. All three regulators might need to be switched off," said Professor Tiganis.

The study showed that high fat diet-induced weight gain is largely prevented



Research student Kim Loh and Professor Tony Tiganis

in genetically-modified mice when two of the negative regulators are deleted in the brain.

"We now have to determine what happens when all three negative regulators are neutralised. Do we prevent high fat diet-induced obesity?"

Professor Tiganis said that the more that is known about obesity, the better equipped scientists are to develop drugs to support good diet and exercise choices.

"Humans have a deep-seated attraction to overeating and nutrient-rich food, inherited from our hunter-gatherer ancestors. Now that food is more readily available and our lifestyles are less active,

our evolutionary drive to overeat is becoming problematic."

More than four million Australians are obese and if current trends continue, by 2020, more than 80 per cent of adults and almost one third of children will be overweight or obese. Studies indicate that obesity and related health issues cost Australians more than \$56 billion a year.

"Simply telling people to eat less and exercise more is not going to be sufficient to reverse the obesity trend. There is a pressing need to develop novel drugs that complement diet and exercise to both prevent and treat this disease," said Professor Tiganis. ^{M³}

72 NHMRC Project Grants for Monash researchers

Monash University has been awarded an impressive 72 NHMRC Project Grants valued at \$41,121,297 in the latest announcements made in Adelaide on 17 October 2011 by the Minister for Mental Health and Ageing, Mark Butler.

Minister Butler's media release also made special mention of Professor Brian Oldenburg's highly topical research on 'Depression, anxiety and outcomes following a heart attack: How are they related?' which attracted \$851,075 in funding.

Professor David Jamie Cooper's TRANSFUSE project netted the highest grant of \$2,761,870 and will test whether patients who receive 'fresher' blood do better than patients who receive 'standard issue' blood.

Other high value Grants went to:

Associate Professor Alistair Nichol, whose PHARLAP research on a novel ventilation strategy for patients with acute respiratory disease syndrome attracted funding of \$997,535;

Professor Helena Teede's research on "Preventing weight gain in young to mid-aged women living in rural communities; cluster randomised controlled trial", with funding of \$863,888; and

Professor Elsdon Storey's research called 'SNORE-ASA: does sleep apnoea cause brain dysfunction by damaging small blood vessels, and can this be prevented with aspirin?' with funding of \$850,000.

Congratulations to these nine outstanding Monash researchers who achieved two NHMRC grants: Dr Caroline Gargett, Dr Dena Lyras, Associate Professor Ramesh Rajan, Professor Stephen Jane, Professor Christophe Marcelle, Professor Raymond Norton, Professor Peter Currie, Professor David Jans and Dr Zane Andrews.

Halina Oswald, Director of the Monash Research Office, congratulated all the applicants on the enormous effort they had made with their applications.

She also thanked the Federal Government and the NHMRC for their continued support of Medical and Health Sciences research.

"The Monash Research Office is very proud of all successful Project Grant awardees and wishes them every success with their upcoming projects," she said.

"We all know how competitive the NHMRC project grant scheme has become and we congratulate our successful applicants," said Professor Ross Coppel, Director of Research and Deputy Dean, Faculty of Medicine, Nursing and Health Sciences. "These results continue the long term trend of improved performance by the University and this year we were third among all Australian universities." M³



Professor Ross Coppel



Professor Michael Cowley

Professor Michael Cowley, Director, Monash Obesity and Diabetes Institute has been elevated to Fellow of the esteemed Australian Academy of Technological Sciences and Engineering (ATSE). The prestigious Academy has approximately 800 members who are peer nominated to Fellowship in recognition of their impact and excellence of achievement.

ATSE fosters excellence in technological sciences and engineering to enhance Australia's competitiveness, economic and social well-being and environmental sustainability. ATSE Fellows drive change in designated priority areas of climate change impacts, education, energy and water.

"I am very honoured to join such an outstanding group of Australians committed to making our world a better place," said Professor Cowley. "With the continued growth of the world population, technological solutions are key to creating a healthy, equitable, and safe environment."

As an ATSE Fellow, Professor Cowley joins other technology and research leaders including Dr Alan Finkel AM, Chancellor of Monash University; Professor Edwina Cornish, Senior Deputy Vice-Chancellor and DVC (Research); and Professor Rod Hill, Pro-Vice Chancellor (Industry Engagement and Commercialisation).

Professor Cowley officially received his Fellowship at the ATSE Oration Dinner on 26 November 2011 in Melbourne. M³

Bruce Tonge seminar

Forum celebrating the career of Professor Bruce Tonge reflects upon the profound impact of his research in our world. By Minto Felix

The most striking feature of the recent forum celebrating the career of Professor Bruce Tonge was being able to deeply appreciate and reflect upon the profound impact of his research in our world.

Although this may seem to be a fairly obvious observation, the discourse of each speaker paying tribute to Professor Tonge that day, the conversations that were held during the break, and the level of engagement that the audience demonstrated throughout the course of the seminar reflected a genuinely purposeful intent: to improve the mental health and well-being of young people, particularly those with intellectual disability and autism spectrum disorders.

In addition to his extraordinary mentoring and passion for teaching, Professor Tonge's tireless commitment to this cause throughout his 40 year career, was also recognised time and time again by those who presented.

The keynote speakers throughout the day highlighted the multidisciplinary approach in addressing the issues of young people's mental health for which Professor Tonge is well renowned. Some of the speakers and topic areas on the day were:

Professor Steward Einfeld outlined The Australian Child to Adult Development Study including the influential Developmental Behaviour Checklist that he and Professor Tonge designed.



Professor Patricia Howlin from the Institute of Psychiatry, London, UK discussed long-term outcome for individuals with autism.

Professor Gillian Turner explored genetic and other causes of intellectual disability and autism.

A host of other leading clinicians and researchers, including several key staff from the School of Psychology and Psychiatry and the Centre for Developmental Psychology and Psychiatry contributed to the excellent program of the day.

Professor Tonge's response at the end of the day exuded humility and gratitude to those who had supported and mentored him throughout his career – and delivered a poignant reminder of the significance of the work that has been achieved in this arena thus far, and the importance of it being further advanced for young people in need.

Although it may be the end of one important chapter for the retiring Professor of Psychiatry, it is the start of many new and exciting beginnings. M³



New directions in Mental Health

The School of Psychology and Psychiatry is offering a new Master of Mental Health Science (MMHSci) aimed at adults working in the mental health, welfare disability, education and criminal justice areas and disciplines. This course prepares graduates for senior clinical, management, policy and planning mental health positions in both clinical and non-clinical settings.

Students will have the opportunity to select from a number of pathways suited to their workplace training needs.

The program offers specialisations in Forensic Behavioural sciences, Community Mental Health and Child Psychotherapy as well as a general specialisation for those with more generic interests.

Graduates of the course will be able to provide leadership in healthcare policy and practice reforms and implement practice based changes to positively influence the delivery and outcomes of mental health care interventions and practices.

All units are delivered on and off campus and there are opportunities for students to complete the course at Graduate Certificate and Graduate Diploma levels. M³

To find out more, go to www.med.monash.edu.au/psych/course/pgrad/mmhs-index.html

Minto Felix

Bachelor of Psychology (with Honours) student preparing for leadership.

Minto Felix, first year Bachelor of Psychology (with Honours) student, has been selected to be part of the Vice-Chancellor's *Ancora Imparo* Student Leadership Program in 2012.

The *Ancora Imparo* Program has been designed to help passionate and committed students prepare for future leadership roles.

Minto was selected from a field of 200 students and 41 students will take part next year.

Earlier this year, Minto was awarded the Premier's VCE Award for his Year 12 academic performance.

After completing Year 12 last year, Minto spent two months in India teaching in different schools in rural areas near Chennai. Following that trip, he spent another month travelling around

Australia visiting all states and territories for a Youth of the Year tour as Victoria's ambassador. This experience exposed him to the important role of public health and issues of social justice in improving mental health outcomes.

Minto recently commenced as a volunteer research assistant in the Stout Lab. He is assisting an honours student investigating the decision making abilities of individuals with different personality traits, such as impulsivity.

In the future, Minto hopes to combine his love for psychology and public health in an academic setting. Whilst he intends to work as a Clinical Psychologist, he is also extremely passionate about discovering innovative and evidence-based solutions to the complex mental health issues experienced by individuals worldwide. ^{M³}

Ancora Student Leadership Program



The Faculty of Medicine, Nursing and Health Sciences congratulates the following students who have gained a place on the prestigious Vice-Chancellor's *Ancora Imparo* Student Leadership Program in 2012:

Connor Rochford
studying for a MBBS

Edward Cliff
studying for a MBBS

Freya Berenyi
studying for a MBBS

Jessica Tavassoli
studying for a MBBS

Julia Buras
studying for a MBBS

Minto Felix
studying for a BPsych
(with Hons)

Keturah Skov
studying for a MBBS

Irene Lu
studying for a BBiomedSci/LLB

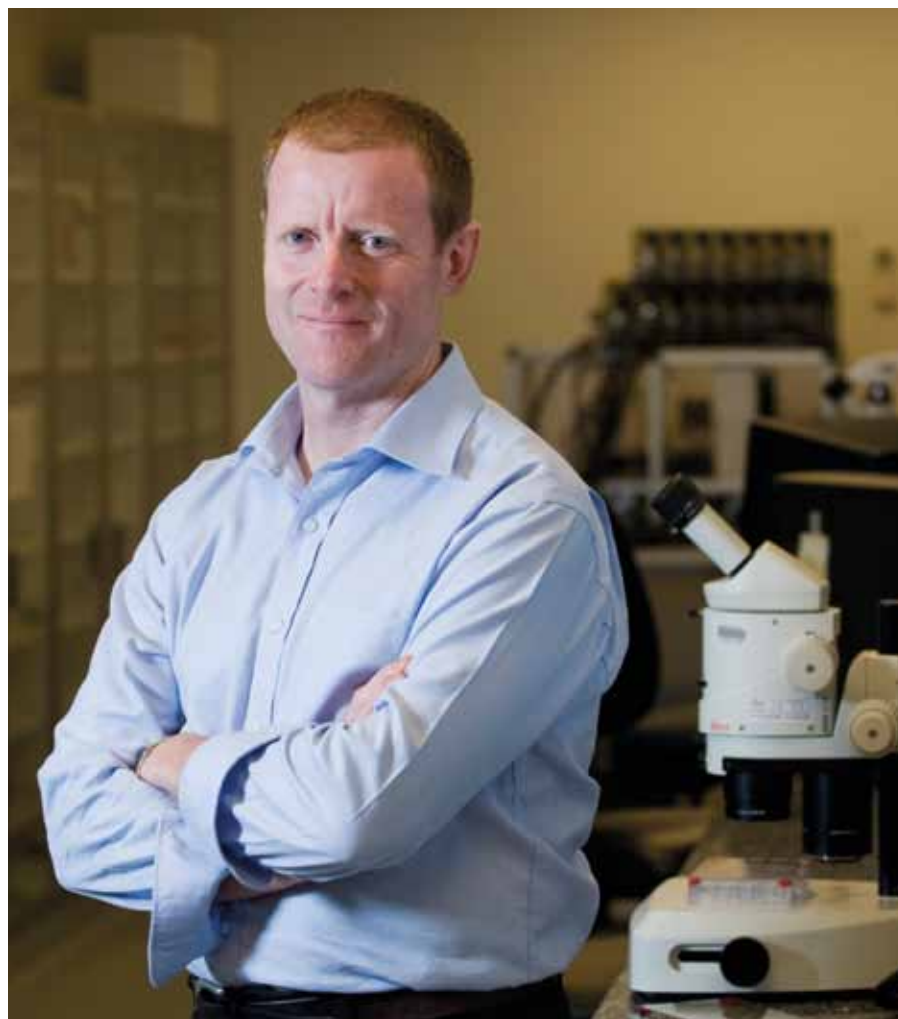
These students were selected from a field of 200 from across the University and will be part of a cohort of 41 participants in the 2012 Program.

The *Ancora Imparo* Student Leadership Program provides students with opportunities and activities to develop their leadership skills while working with other passionate and committed peers. ^{M³}



Unravelling the mysteries of the Natural Killer within us

Scientists have discovered more about the intricacies of the immune system in a breakthrough that may help combat viral infections such as HIV.



Using the Australian Synchrotron, the team determined the three dimensional shape of one of these key KIR proteins, termed KIR3DL1, which binds to a particular HLA molecule.

This pairing is known to play a role in limiting viral replication in people with HIV, slowing the progression of the disease to AIDS.

Professor Rossjohn said that better understanding the structure of KIR proteins may help to develop approaches to better utilise natural killer cells to combat viral infection.

“It is only possible to detect proteins, such as KIRs, using extremely high-end equipment. The use of the platform technologies at Monash and the Australian synchrotron was absolutely essential to this project’s success,” Professor Rossjohn said.

Professor Brooks said the researchers would use these findings to investigate other KIR molecules.

“Since KIR3DL1 is only a single member of a much larger family of receptors, the study provides key insight into how natural killer cells utilise other members of this important family of receptors to recognise virus-infected cells and tumours.” Professor Brooks said.

The five year project involved international collaborations with researchers from the National Cancer Institute-Frederick, National Institute of Allergy and Infectious Diseases, National Institutes of Health and Cardiff University School of Medicine.

This research was funded by the National Health and Medical Research Council, the Australian Research Council, the Intramural Research Programs of the National Cancer Institute, the National Cancer Institute of Allergy and Infectious Diseases, Medical Research Council (UK) and National Institutes of Health. ^{M³}

Professor Jamie Rossjohn

Co-led by Professor Jamie Rossjohn of Monash University and Associate Professor Andrew Brooks from The University of Melbourne, an international team of scientists have discovered more about the critical role Natural Killer cells play in body’s innate immune response.

The findings were recently published in *Nature*.

Natural killer cells are a unique type of white blood cell important in early immune responses to tumours and viruses. Unlike most cells of the immune system that are activated by molecules

found on the pathogen or tumour, Natural Killer cells are shut down by a group of proteins found on healthy cells.

These de-activating proteins, known as Human Leukocyte Antigens or HLA molecules are absent in many tumours and cells infected with viruses, leaving them open to attack by the Natural Killer cells.

Natural killer cells recognise the HLA molecules using an inbuilt surveillance system called ‘Killer cell immunoglobulin-like receptors’ (KIR).

Monash leads the World in Climate Change Action

Women adversely impacted by climate change was the focus for researchers, activists and policy makers from 24 countries gathered at a ground-breaking conference at Monash's centre at Prato in Italy.

Hosted by Professor Margaret Alston, head of the Gender, Leadership and Social Sustainability (GLASS) research unit at Monash University, the 12–14 September conference included delegates funded by AusAid and the US Department of State. African countries, Pacific Islands, the Americas, the EU and Australia were represented, including Mr Justin Sosne from the US Department of State and recently retired Liberal Senator for Victoria and Chair of the GLASS research unit advisory board, Ms Judith Troeth.

The conference was addressed by the US Ambassador-at-Large for Global Women's Issues, Melanne Verveer, on the gendered impacts of climate change.

"We want to ensure that gender issues are addressed in ongoing climate change negotiations at international and national levels", said Professor Alston. "We call on countries across the world to ensure that women do not bear a disproportionate burden of climate change events."

Delegates challenged the market-based arguments that dominate discussions of climate change arguing it is a 'race to the bottom'. They urged legally binding agreements that would address the quality of life of those most critically impacted – overwhelmingly the poor countries of the developing world and vulnerable groups within countries. Calls for a new appraisal of the way the environment and communities intersect

were a conference outcome, ensuring that solutions do not impact unfairly on the most vulnerable.

"We need a new climate change analysis model that does not exploit people and the environment to the benefit of a few, a model that meets people's needs without literally costing us the earth," Professor Alston added.

The research, action and policy recommendations developed at the conference will be taken to 17th United Nations Framework Convention on Climate Change (COP 17) Commission for the Status of Women meeting and the Earth Summit meeting in 2012. M³



Professor Margaret Alston (right)

Midwifery award recognises dedication to remote health

Monash graduate Vanessa Page has won a major midwifery award for her dedication to caring for pregnant women in the remote Kimberley, WA.

By Georgie Raik-Allen

Vanessa was the sole community midwife in Fitzroy Crossing for two years, caring for up to 50 pregnant Indigenous women at a time, many with significant health issues and complex social problems.

Working autonomously, she cared for women throughout their pregnancies, allowing her to build trusting relationships and have a positive impact on maternal and neonatal outcomes.

Many of the women were 'high risk' with pregnancies complicated by health problems such as gestational diabetes, anaemia, pre-existing chronic disease, sexually transmitted infections and obesity.

With minimal resources, Vanessa also found herself addressing many social issues that were affecting the women she was caring for, such as domestic violence, teenage pregnancies and substance abuse.

"It can be really overwhelming at times, but also immensely rewarding," Vanessa explained. "Sometimes the pregnancy can be a great opportunity to address other issues or have other health problems diagnosed."

She was recognised for her passion and contribution to women's health when she was named 2011 Remote and Rural Midwife of the Year at the recent Western Australian Nursing and Midwifery Awards in Perth, a red carpet event.

Vanessa completed a Graduate Diploma of Midwifery at Monash University's School of Nursing and Midwifery Gippsland campus after a number of years experience as a remote area nurse.

Typical of a remote health practitioner, Vanessa has worked autonomously on many occasions and has dealt with all sorts of accidents and health emergencies. "Nothing I saw really freaked me out," she said, "except for obstetrics."

After moving back to Victoria for a while she took the opportunity to



complete the diploma and qualify as a registered midwife before returning to remote work in Fitzroy Crossing.

She said it took about six to 12 months to earn the respect and trust of the locals, partly by adapting to a "different cultural approach."

The appointment system doesn't operate effectively in a culture with a different concept of time, so she had to be flexible and make herself available whenever a woman showed up. She often had to drive to pick up a client who lived far away or lacked transport, and on other occasions had to convince women she'd "heard could be pregnant" or were concealing their pregnancies to come and see her.

Vanessa said on some occasions women would present for just one or two visits from communities up to 600 kilometres away, making it difficult to compile their antenatal record, or put together necessary referrals and health plans.

Despite the challenges, working in remote and Indigenous health was very rewarding. "In this community I am not anonymous, I am Vanessa the Midwife,"

she said. "And when a woman feels safe enough to return for follow-up, that beats a box of chocolates any day."

She believes the health system needs to encourage traditional midwives and Aboriginal health workers to be more involved in the care of Indigenous women during pregnancy and birth. She would also like to see a boost in resources so that women living in remote communities did not have to travel up to 1000 kilometers to give birth.

"I'd love to see women with low-risk pregnancies birthing in their own communities, but we need better resources for this."

She is currently working in the maternity unit at Derby Hospital – also in the Kimberley – and travels every second week to Fitzroy Crossing to provide women's healthcare, and also to maintain her connections with the community.

She is studying to become a nurse practitioner, and with eligible midwife registration, Vanessa hopes to establish a position in Derby to provide another option for women's and maternal healthcare. M³

Monash researchers lead creation of heart cells

Heart disease is the leading cause of death in Australia and now, in a major boost for drug development, scientists will be able to mimic its effects in a petri dish after identifying a new, reliable way of producing heart cells in the laboratory.

Published in the prestigious journal, *Nature Methods*, the Monash University-led research shows how human heart cells can be consistently produced from embryonic stem cells, creating a potentially inexhaustible source for research and drug discovery.

Dr David Elliott, and Professors Andrew Elefanty and Ed Stanley of Monash Immunology and Stem Cell Laboratories led the Monash group which collaborated with a number of institutions in Australia and overseas.

Dr Elliott said the researchers were able to isolate the heart cells by turning them green.

“We linked a green fluorescent marker – originally from a jelly-fish – to a gene found in heart cells, causing them to glow,” Dr Elliott said.

“Using this cell line we have discovered two new cell surface proteins that we can use as ‘handles’ to allow us to grab only the cardiac cells from cultures containing different cell types. Importantly, we can use these handles to isolate and study cardiac cells grown from the stem cells of heart disease patients, and, in this way model heart disease in a dish.

“This finding is significant because up until now, the development of drugs to treat heart disease has been hampered by the lack of a dependable supply of heart cells for experimentation,” Dr Elliott said.

Professor Elefanty said that in the future, these markers could be used to pull out heart cells from cultures without having to use genetic modification to make the desired cells visible.

“We are now starting to make significant steps in the search for stem-cell based therapies for heart disease and our findings will drive further research and discovery in this field,” Professor Elefanty said.

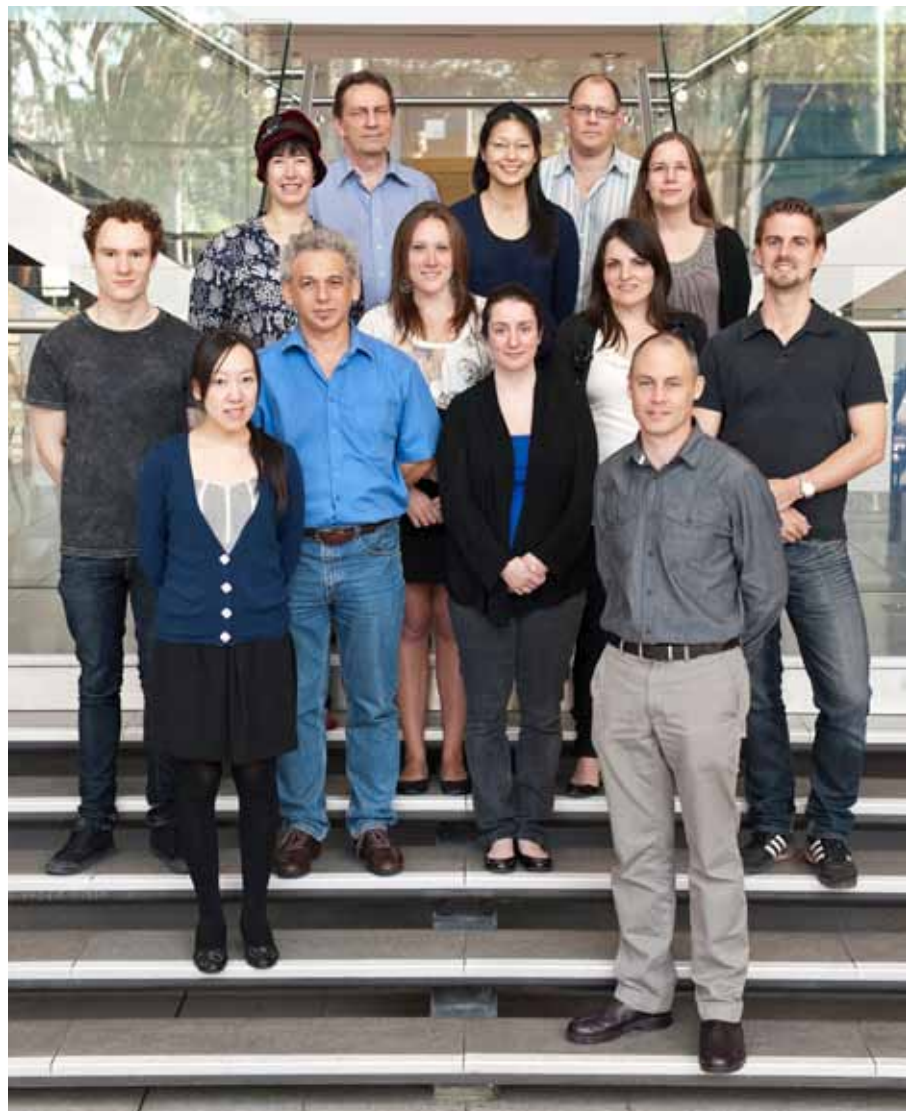
to isolate insulin-producing cells for the treatment of diabetes, and blood cells for the treatment of leukaemia.

The study was undertaken by a collaboration of 26 researchers from the Monash School of Biomedical Sciences, Monash Institute of Pharmaceutical Science, Walter and Eliza Hall Institute and Baker IDI Heart and Diabetes Institute, in Melbourne, as well as Leiden University Medical Centre and Netherlands Proteomics Institute, in the Netherlands.

The Australian researchers were funded by the Australian Stem Cell Centre, the National Health and Medical Research Council of Australia, the Heart Foundation and Victorian State Government. M³

“This breakthrough is the result of more than ten years of work by the world-leading team at Monash and it illustrates the benefits of investing time and resources in stem cell research.”

The team, led by Professors Elefanty and Stanley, are using similar strategies



Dr David Elliott with members of the research team.

Living anatomy, painting the body

It was a combination of science and serendipity that led Professor Paul McMenemy to develop body painting into what is now an internationally acclaimed teaching tool. The technique has since travelled the world, attracting both academic accolade and mainstream media attention.

Professor McMenemy stumbled across the technique in 2005. While running a series of weekly classes for life-drawing students, he began to draw on himself, using a marker to better illustrate surface anatomy. An onlooker and organiser of the life model society in Perth, Joanna Robertson, suggested he attempt drawing on a life model. Coincidentally, a colleague in the UK had also alerted him to an article about a Dutch medical group using body painting to teach the location of the stomach and bowel. Although the use of a whiteboard marker or a wax crayon is more traditional in anatomy teaching, Professor McMenemy decided to try painting on a model's body and staged an experiment with the same life-drawing class two weeks later.

The results were explosive. "I thought, 'this is amazing'...it just went off like a bomb," Professor McMenemy recalls. Because these drawing students were not permitted to access cadavers, for many of them it was like seeing under the skin for the first time – providing significant missing pieces of the surface anatomy puzzle.

Two significant guests were there to witness this moment. One was a top professor of neurosurgery in Perth, who was attending the life drawing class; the other was the wife of the Dean of the Faculty of Medicine, Dentistry and Health Sciences at the University of Western Australia, where Professor McMenemy



held the position of Professor of Anatomy. The technique was subsequently developed with students in the faculty, using non-toxic body paint and non-sensitive areas of the body. Starting with hands and faces, they moved to the upper torso and feet and legs. "We've done everything, on and off, with various groups of students and the feedback from them is very positive," he says.

Professor McMenemy applies the body-painting technique, along with twenty-two years of teaching experience, to his new appointment as Professor of Anatomy and Director of the Centre for Human Anatomy Education at Monash University, which he commenced in February 2010.

He believes that techniques such as body painting encourage deeper, more independent thought and prove science can be interesting and exciting.

Professor McMenemy's personal mantra is derived from an old Confucian expression: "when you're involved and experiencing and you're using all of your senses you're more likely to remember". This is the essence of kinesthetic learning – clinical work and basic sciences converge and all the senses are engaged. As he puts it to his students, "you've seen this in a book, you've seen this on a dead body, now show me what it looks like on a live person".

A significant side benefit of the technique is that it breaks down typical peer-to-peer interaction issues, forcing students to develop both their clinical manner and empathy. The person who is being drawn on is the subject of an examination of sorts, and the 'drawer' must learn to communicate with them as they would with a patient.



radiographic imaging, MRIs, CTs... I think I know what the result would be, but no one has done that kind of study," he explains.

Professor McMenemy plans to integrate more medical imaging into teaching, especially the 'VH Dissector', a virtual reality software that is based on the US National Library of Medicine's Visible Human Project, in which a male and a female cadaver were cut into thin slices, photographed and digitised. Students can remove all body systems and with the use of a projector and body paint, can use the projected image as a guide to paint them onto their peers. When Professor McMenemy then turns the projector off and the lights on, the result is awesome – internal anatomy surfacing on an animate body. "Most students are amazed at how it looks, it's so good," he says.

This, however, is only the beginning.

"In two years we could be doing this in three dimensions and in a few years students could go inside the body... that's what we're looking at."

Paul's reputation as a passionate and involved educator has been formally recognised by a succession of Excellence in Teaching Awards (2002 and 2005) from UWA, eventually earning him the WA Premier's Science Award for Excellence in Teaching (Tertiary) in 2007. M³

Professor McMenemy says a teacher can be somebody who influences your destiny. For him this came in the form of two high school teachers, Brian and Maeve, who dramatically altered the course of his life and career path. They taught him geography and biology respectively in a working class neighbourhood in Glasgow, where it was unheard of for students to go on to higher education. Brian took the young Paul McMenemy, alongside other students, bird watching on the weekends and nurtured in them a hunger for learning. Maeve stayed back into the evening to set up experiments so that Paul could complete a crash course in biology and be eligible to study zoology at university.

Professor McMenemy clearly shares this passion for teaching. "Talking to the students, you can see their eyes lighting up and the wheels turning. You're giving them ideas and making them think," he says.

Because teaching anatomy has traditionally been done by dissection, there's a school of thought that this must be the best method, but Professor McMenemy is quick to point out that there is no supporting evidence. "If I took a hundred students and taught them purely by dissection and another hundred students and taught them by prosections, models, body painting,

Monash Alumnus promoted to Dean



School of Nursing and Midwifery graduate Dr Khaled Al Hosis has been promoted to Dean of Nursing College at Qassim University in Saudi Arabia, less than a year after completing his PhD at Monash.

Khaled received excellent results for his PhD, which examined the preparation and qualification of nurses for senior management roles in Saudi Arabia. He found that Saudi Arabian nurses are not adequately prepared for roles in nurse management despite Government policy designed to increase the proportion of Saudi nationals in the local workforce.

His research, completed at the University's Peninsula campus, found that Saudis made up only 27 per cent of nurses and 4.45 per cent of nurse managers in that country. The vast majority of management roles were filled by expatriates who were attracted to benefits such as tax-free salaries.

"Saudi Arabia is reviewing its health workforce needs as its population faces

a period of rapid growth and the demand on its health service becomes more complex," Khaled said.

He was concerned that the shortage of Saudi nurses qualified to take management roles may continue if the growing young population was not educated and prepared effectively.

Khalid returned to Saudi Arabia last year after seven years of tertiary study in Australia. He has published his research in his own country and presented his findings to nursing bodies and health organisations in order to contribute to positive change.

Since completing his studies, Khalid has enjoyed rapid career success. He was offered the position of Deputy Dean of Nursing College at Qassim University shortly after returning home in mid 2010 and promoted to Dean a few months later in 2011. M³

Community Theatre more than just a show

Community Theatre as a tool to communicate research findings is a unique form of knowledge transfer.

Using theatre performance to engage and inform older people about key life events is the topic of Associate Professor Susan Feldman's latest research, published in the prestigious journal, *Educational Gerontology*. This important research publication supports the Healthy Ageing Research Unit's mission to improve the quality of life of older people through the development of evidence based services.

Associate Professor Feldman, Director of the Healthy Ageing Research Unit, School of Primary Health Care, used quantitative and qualitative data to identify the acceptability and potential benefits of the medium of research-based community theatre on the psychosocial health and wellbeing of older people. "Theatre is a tool that has been used for centuries to inform and educate, however, the concept of translating the findings of rigorous research into a play is a unique form of knowledge transfer," Associate Professor Feldman said. "Theatre offers an alternative strategy for educating and informing the community about research findings."

Many older people have low functional health literacy and government health organisations and agencies face difficulties disseminating health information. "Research-based community theatre can engage audiences and convey research findings and key psychosocial health and wellbeing messages in an entertaining, safe, and supportive environment," added Associate Professor Feldman.

Associate Professor Feldman received wide publicity in 2006 when her PhD thesis on widowhood became the basis of a play, *Wicked Widows*. In the last five years, the play, written by well known playwright Alan Hopgood, has been staged in more than 40 locations across Victoria and has been attended by over 6000 people. *Wicked Widows* uses humour to address the issues of widowed women struggling with their new identity. "The objective of the play is to counter negative stereotypes about older



widowed women and the themes include health, financial, emotional and social wellbeing concerns," said Professor Feldman.

Associate Professor Feldman and the playwright, Alan Hopgood conduct forums with audience members after every performance of the play and the information collected formed the basis of the latest research findings. "While some attendees find the issues in the play confronting, the reactions are overwhelmingly positive as audience members find comfort in having their emotions affirmed," added Associate Professor Feldman. "Others who have seen the play report they have more empathy with and understanding of the experience of widowhood."

Associate Professor Feldman sees the potential for research-based community theatre to be used as a knowledge transfer tool in other languages in Australia and across wider audiences. While it may just be a comedy performance for some, it is certainly making a direct impact on the wellbeing of our ageing community. M³



Associate Professor Susan Feldman