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uniken

Pat Dodson

on God, philosophy
and the move
to academia

The G20 rescue
Economic stimulus
or fiscal disaster?

The best way
to keep mum
Battling postnatal
depression

COFA goes
to Venice



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THE UNIVERSITY OF NEW SOUTH WALES

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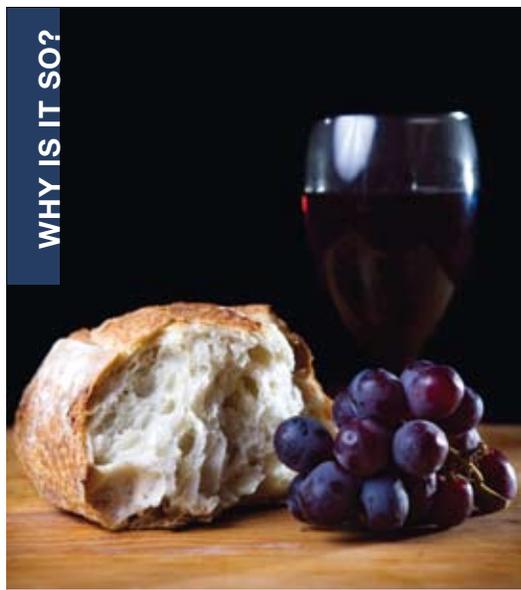
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WHY IS IT SO?



How important is food fermentation?

By Associate Professor Julian Cox, Associate Dean (Education), Faculty of Science

Since ancient times, humans have enjoyed fermented foods. Foods and beverages such as bread, wine and beer and the early ancestors of cheese and yoghurt were all consumed. Of course there was no understanding of how those products came to be. That had to wait for Louis Pasteur, a chemist working in the 19th century, who discovered the role of micro-organisms in fermentation.

So what is *fermentation*? Much like us, micro-organisms 'eat' parts of the food into which they're introduced and then excrete their 'waste', but to our benefit. For example, yeasts take sugars, converting them to alcohol and carbon dioxide, the amounts produced dictating their role in production of beer and wine, or bread. Some bacteria use lactose, the sugar found in milk, producing lactic acid, among other things, which is crucial to the production of yoghurt and cheese.

Some of these lactic acid bacteria are *probiotics*. Their help doesn't stop with making the food; they help maintain balance in the gut, helping the body defeat 'bad bugs' like *Salmonella*. Other lactic acid bacteria are important in making vegetable products, like sauerkraut.

Apart from all the foods already mentioned, fermentation is also crucial to production of Asian foods like kimchi, tempeh and miso, as well as soy and fish sauces.

You may not realise that tea, coffee and even chocolate need the "touch" of micro-organisms to make them what they are! Take cocoa for example. Unlike wine, which has a carefully controlled fermentation, cocoa is fermented naturally. The flesh around the cocoa bean, which is much like that of a custard apple, is fermented by a succession of micro-organisms, the flavours produced by them giving chocolate its richness. It would be very bland without it! •

FOR THE RECORD

"Those kinds of comments are killing people."

Dr David Wilson, National Centre in HIV Epidemiology and Clinical Research on Cardinal George Pell's claims that condoms aggravate AIDS and promote promiscuity – Herald Sun

"These are not people smuggling drugs or arms, these are people seeking protection. And these numbers are not enormous."

Dr Claudia Tazreiter, School of Social Sciences and International Studies, believes it is global turmoil, not policy, which is increasing the numbers of asylum-seekers coming to Australia by boat – Daily Telegraph

"Women might burn more fat during exercise, but for the other 23 hours of the day when they are not exercising, they are more efficiently storing fat."

Associate Professor Anthony O'Sullivan on how oestrogen aids fat storage in pre-menopausal women to prepare them for childbirth – The Age

"Everybody likes to think there's 'a free lunch' or a good surprise waiting around the corner, and that's the sort of hope that scammers prey on."

David Vaile, Director, Cyber Law and Policy Centre, on how to spot a scam email – Radio 2GB

"I could see it being applied in the spinal chord, I could see it being applied to the pancreas, I could see it being applied to the liver."

Professor Peter Gunning on UNSW's breakthrough stem cell research which will allow damaged tissue to regenerate – ABC Online

"If you could find a 'drowning gene' or the 'road transportation killer gene' then it would be simple."

Professor Paul Barach, director of the Injury Risk Management Research Centre, on why the rate of accidental death and injury in children is often overshadowed by the push for cures for childhood diseases – Sydney Morning Herald Online

Tribute for champion of Indigenous rights

The Director of UNSW's Indigenous Law Centre and former United Nations Indigenous Fellow, Megan Davis, has been acknowledged in Federal Parliament for her role in the development of the United Nations Declaration on the Rights of Indigenous Peoples.

In announcing the government's decision to endorse the Declaration, the Minister for Families, Housing, Community Services and Indigenous Affairs Jenny Macklin paid tribute to Ms Davis and other notable Australians including former and current Australians of the Year Lowitja O'Donoghue and Mick Dodson, and Aboriginal and Torres Strait Islander Social Justice Commissioner Tom Calma.

Fighting STIs

The Federal Government has announced it will provide \$2.5 million to establish a Centre for Clinical Research Excellence in Aboriginal Health at UNSW.

National Health and Medical Research Council funding will establish the Centre as a full partnership between the National Centre in HIV Epidemiology & Clinical Research (NCHECR) and the National Aboriginal Community Controlled Health Organisation (NACCHO).

The Centre will investigate Sexually Transmitted Infections (STIs) and blood-borne viruses in five urban and regional Aboriginal Community Controlled Health Services across Australia.

The new Centre will run for five years and will be jointly chaired by Ms Dea Delaney Thiele CEO of NACCHO and Professor John Kaldor of NCHECR.



Photo: Fabrice Coffrini/AFP

Opening the Gates to HIV research

The Bill & Melinda Gates Foundation has given more than \$18 million in funding to UNSW to support a research project with the potential to extend drug therapy to millions of HIV-affected people worldwide.

The research team, led by Professor Sean Emery and Dr Mark Boyd at UNSW's National Centre in HIV Epidemiology and Clinical Research (NCHECR), will study the effectiveness of optimised doses of an HIV drug treatment, known as antiretroviral therapy (ART).

If proven effective, the project would allow governments and non-government organisations to purchase more supplies for the same budgets, and ease the pressure on manufacturing capacity to meet the growing demand for the therapy.

Dose reduction could allow enhanced funding for further treatment, care and prevention work.

Drug therapy for HIV not only extends and improves the quality of life of people with HIV, it may also reduce the possibility of that person infecting others.

The (Mini) mouse that roared

The technical talents of UNSW Engineering's Redback Racing Team were called on by TV show *Top Gear Australia* to help give a humble Leyland Mini the protective capabilities of an armoured presidential limousine. During a visit to the Redback workshop in March, *Top Gear* presenter Steve Pizzati drew on his own engineering background and the abilities of the Redback team to give the Mini an imposing makeover including armour plating and a tricky braking modification. The episode is due to air on SBS in June.



Photo: Rick Munitz

When you're down ...

Photo: Evan Morgan, NewsPix



There's an upside to feeling down when the weather is gloomy: your memory is far more accurate than it is on bright and sunny days.

Researchers from UNSW's School of Psychology made the surprise finding in an unobtrusive study carried out in a suburban newsagency in Sydney. The results, published recently in the *Journal of Experimental Psychology*, add to a growing body of evidence that the way people think, the quality of their judgments and the accuracy of their memories are all significantly influenced by positive and negative moods.

"People performed much better on our memory test when the weather was unpleasant and they were in a slightly negative mood," said the research team's leader, Scientia Professor Joe Forgas. "On bright sunny days, when they were more likely to be happy and carefree, they flunked it." •

Golden achievements

Professor Ken Maher, of the Faculty of the Built Environment, has confirmed his status as one of Australia's leading architects by winning his profession's highest honour, the Australian Institute of Architects Gold Medal.

Maher is a UNSW alumnus and an architect and landscape architect who, throughout a stellar career, has helped shape Sydney with key projects that include the restoration of Luna Park, the Olympic Park railway station and the NIDA building.

He becomes the third academic from the Faculty to win a gold medal, joining last year's winner, Professor Richard Johnson, and 1992 winner Professor Glenn Murcutt.

Professor David Cooper, Director of UNSW's National Centre in HIV Epidemiology & Clinical Research, has received the 2008 Sir William Upjohn Medal for services to medicine.

The medal is awarded every five years by the University of Melbourne for distinguished services to medicine in Australia. One of the most sought-after honours in the medical fraternity, it is the first time it has left Victoria in its 50-year history.

A pair of outstanding researchers from either end of the career spectrum in the UNSW School of Physics have won two of Australia's most prestigious academic awards.

Dr Adam Micolich has been awarded the 2008 Edgeworth David Medal by the Royal Society of NSW. Given annually to a scientist under the age of 35 for distinguished contributions to Australian science, it is one of the most prestigious early career awards.

Scientia Professor Victor Flambaum has been awarded the 2008 Lyle Medal by the Australian Academy of Science. The Lyle Medal recognises outstanding achievement by a scientist in Australia for research in mathematics or physics.

Great dissenter in law

Former High Court Justice Michael Kirby has accepted a position as Visiting Professor in the Faculty of Law.

The judge known as "the Great Dissenter" said he was "delighted" to accept an offer made by Vice-Chancellor Professor Fred Hilmer.

"I now have a number of professorships and plan to compensate for the loss of my judicial title by insisting that I am called 'Professor Dr Professor Kirby'," he joked.

However, Professor Kirby said he believed any delusions of grandeur would be cured by his new students and by his partner Johan at home, who would "keep his feet firmly on the ground".

"I have been coming to UNSW since the late 1950s and have watched its law school grow to one of world renown," he said.

Dean of the Faculty of Law Professor David Dixon said: "Professor Kirby will contribute to the Faculty in a number of ways, including writing, teaching and mentoring. Students and staff will benefit from his wisdom and experience."

Bright sparks

NSW universities and the State Government have jointly funded a new Fulbright scholarship for young researchers.

Premier Nathan Rees announced the scholarship at UNSW. The State Government has invested \$250,000, with matching funding contributed by NSW universities.

The scholarship, valued at \$50,000, will give talented young people from NSW special opportunities to participate in the prestigious Fulbright Program. Applications open in June.

Science under the microscope

A panel of eminent overseas and local scientists is advising UNSW on how to best position the Faculty of Science as an international research leader.

The panel has been engaged in preliminary work on the review since late last year.

Professor Herbert Huppert, Director of the Institute of Theoretical Geophysics at the University of Cambridge, is chairing the review. The eight other members of the elite panel include **Professor Willy Aspinall**, Director, Aspinall and Associates, Visiting Professor, University of Bristol; **Professor Oliver Braddick**, Head, Department of Psychology, Oxford University; **Professor Anne Glover**, Chief Scientific Adviser for Scotland; **Professor Mimi Koehl**, Integrative Biology, University of California, Berkeley and **Professor Les Field**, UNSW's Deputy Vice-Chancellor (Research).

"The panel has been asked to assess the strengths of the Faculty in terms of national and international research performance, nominate areas where additional resources might improve performance, and identify opportunities for strengthening collaboration between Science and other Faculties," said Vice-Chancellor Professor Fred Hilmer.

Safe as ... houses?

Australia must act now on its future housing needs, a UNSW researcher has told a government inquiry. Peter Trute reports.



Australia is growing older and our needs are changing but our homes and the law are not keeping pace, a leading researcher into housing accessibility and safety has warned.

Associate Professor Catherine Bridge, Director of the Home Modifications Information Clearinghouse (HMInfo), says housing design plays a crucial role in helping elderly, frail and disabled people to participate fully in society. And yet, as Australia's population ages, there are no laws to ensure the nation's housing stock will meet the needs of an older society, setting the scene for a blowout in health costs and marginalisation of our most vulnerable citizens.

HMInfo, based in the Centre for Health Assets Australasia in the Faculty of the Built Environment, is the only research group in Australia investigating how the built environment impacts on older people, people with disabilities and their carers. Part of HMInfo's approach is to look at buildings as prosthetic devices: appropriate, accessible housing, says Bridge, is as important as hip replacements or false teeth when it comes to maintaining a person's wellbeing and contact with society.

"We are heading into the biggest demographic change in Australian history," Bridge says. "We have a window of opportunity to do something about making

the investments and creating the cultural change needed to reduce its impact."

Previous research commissioned by the government shows that slips, trips and falls in buildings place a \$250 million burden on the health system each year – an amount that will only increase if the right steps aren't taken, says Bridge.

A federal parliamentary inquiry recently took public submissions on draft legislation to set standards for access to premises. In the HMInfo submission, Bridge noted that the draft legislation does not cover residential housing. With ever-increasing numbers of people living in medium- and high-density developments, there is a danger that housing stock will not meet the future needs of many in the community, in particular low-income renters.

Bridge's submission urged a number of changes, including an end to the use of access ramps in new buildings, as they fail to remove the danger of slip, trip and fall injuries. She also recommended the use of multi-sensory alarm systems, as standard fire alarms may not be heard by those with impaired hearing.

On a broader scale, she warned that the data on body shapes and physical abilities – such as reach distance – currently being used to set access standards in public and private buildings is outdated, and new guidelines are urgently required.

Some developers and agencies are making

notable efforts to address accessibility issues in the design of new homes, says Bridge, but laws are needed to ensure all new developments are compliant.

"New housing developments may not give any consideration to accessibility because there is no legal requirement to do so."

Particularly affected are common areas and gardens in multi-dwelling developments, which are often inaccessible for people with mobility issues.

"The exclusion from the draft legislation of housing and accessibility to common areas is disappointing because it actively discriminates against those who are most vulnerable," Bridge says. "There also appears to have been little thought given to housing accessibility for either new buildings or retrofits.

"If slips, trips and falls due to inappropriate design and other elements such as lack of grab rails is costing us \$250 million now, the cost burden will increase dramatically as more of the population ages.

"There is a very high correlation between age and impairment and a person's housing conditions, and local neighbourhood circumstances are critical factors in older Australians' overall wellbeing." •



Listen to the podcast by clicking on the iTunes icon on the UNSWTV homepage www.tv.unsw.edu.au

Rising stars in a sinking city

Australia's representation at the world's most prestigious art event – the Venice Biennale – is dominated by staff and graduates of UNSW's College of Fine Arts. Anabel Dean reports.



Off to Venice ... academic Felicity Fenner is curating one of two Australian exhibits at the Biennale in June

The convent rooms of the Ludoteca had great artistic promise but Felicity Fenner was momentarily intrigued by the door in one wall.

“What’s behind that door?” the curator asked the Italian official who was guiding her around one of the sites proposed for Australia’s group exhibition at the Venice Biennale.

He opened the door to reveal the honey-coloured marble interiors of a 16th century chapel on a canal.

“Oh! I said. ‘Is this available for hire?’ He looked at me. ‘It would cost your country much money!’ he said.”

Negotiations were on. In the end, it didn’t cost too much money, and the canal frontage assured Australia a commanding position at the most important contemporary art show in the world.

It’s a revealing vignette of a diminutive and lively curator who is determined to make people take notice.

The last time Fenner attracted public attention was as curator of the 2008 Adelaide Biennial *Handle with Care* exhibition. The event attracted unprecedented numbers and was hailed as “the best show of its kind” by one respected art critic.

No sooner had the Adelaide Biennial closed, than Fenner, a lecturer at UNSW’s College of Fine Arts (COFA) and the senior curator of the college’s Ivan Dougherty Gallery, was announced group show curator at the Ludoteca, while Australia’s major artist, COFA graduate Shaun Gladwell, was named as

Australia’s only representative in the main exhibition.

Fenner’s “wish list” for her exhibition *Once Removed* included two other globally itinerant COFA graduates: Claire Healy and Sean Cordeiro. Their towering *Life Span* installation of 195,774 obsolete videotapes will dominate the convent chapel, nearly touching the ascension fresco that adorns its ceiling. The tapes in this monolith on the meaning of life and spirituality have a viewing time equal to the average human life span of 66.1 years.

Brisbane-based artist Vernon Ah Kee – who has both Aboriginal and Chinese ancestry – and Ken Yonetani, a Japanese migrant to Australia, complete the coterie. Their personal experiences underpin two more installations that focus on themes of social displacement and environmental ruin.

“My idea was to create a feeling of being slightly at odds with the world,” Fenner explains. “They depict a slightly surreal reality and for me that has a nice resonance with Venice itself. Venice is like one big stage set. You persuade yourself it’s real, but it’s actually being propped up to stop it sinking under water.”

Water threatens to claim one of the installations if the tide rises. “We’re hoping that the bottom layer of videos in Claire and Sean’s work will be resilient because it normally floods in Venice at the beginning of winter,” Fenner says. “There was 50 centimetres of water in there last year.” Water is an equally portentous theme for the other artists. Vernon Ah Kee’s surfboard

wrapped in barbed wire hangs like a man lynched from a tree in *Cant Chant* while Aboriginal surfers reclaim the beach in Billabong board-shorts and Bolle sunglasses. The unmistakable reference is made here to the mass displacement of Ah Kee’s people and their continued experience of alienation.

Ken Yonetani’s delicate, sugar-coated *Sweet Barrier Reef* sculptures explore the schism between man and nature. The coral in the Zen garden of sugar is dead. It’s a ghostly lesson on the failure to recognise damage caused by disengagement with the natural world.

“I guess we’ll need lots of cockroach baits and rat traps,” Fenner says. “That’s my fear: the vermin in Venice in summer and the sugar sitting there for six months.”

No sugar or videotape stack could have been delivered to Venice without the help of COFA. Nor, for that matter, could the curator and the five arts administration students who have been selected to attend as part of the planning and installation team.

“While I’m confident that it will be very well received internationally, I’m not really too fussed if the show gets poorly reviewed, so long as it gets reviewed,” Fenner says. If the curator has her way, the Venice Biennale will afford further exploration of the great diversity of talent in Australia that is still waiting to be revealed elsewhere. •



Watch the video on UNSWTV’s Arts and Society channel at www.tv.unsw.edu.au



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2



3

The exhibition *Once Removed* will feature work by artists Claire Healy and Sean Cordeiro (1 – earlier work, 2); sugar coated sculptures of the Great Barrier Reef by Ken Yonetani (3); an installation by Vernon Ah Kee (4 – portrait), which explores the disconnection between Indigenous and modern Australian culture (5,6).



4



5



6

Hospital safety you can bank on

Could a safety trading scheme, similar to a carbon emissions scheme, give hospitals a mechanism to improve performance? Steve Offner reports on this radical suggestion.



Illustration: Karl Hiltzinger/www.fairfaxphotos.com

Hospital mistakes can have fatal consequences. When schoolgirl Vanessa Anderson was admitted to Sydney's Royal North Shore Hospital in November 2005 after being hit in the head with a golf ball, her fractured skull was assessed as not life threatening and it was assumed she would make a full recovery. But 36 hours later the 16-year-old was dead.

A special commission of inquiry into her death found Vanessa had died from respiratory arrest due to the effects of opiate medication administered after a doctor misread her chart.

"Almost every conceivable error or omission" had occurred in her treatment, the Coroner found, recommending that a separate inquiry be held into acute care services in NSW hospitals.

The subsequent Garling Review outlined major deficiencies in the health system, concluding it was a system "in crisis".

Crisis is no overstatement. Independent research shows that one in 10 hospital admissions will result in an adverse medical event – such as hospital-acquired infections, falls resulting in broken bones or the administration of the wrong drug. Two per cent of those incidents are classified as serious. All this in a system charged with alleviating suffering in the first place.

For Professors Enrico Coiera and Jeffrey Braithwaite, from UNSW's Institute of Health Innovation, the Vanessa Anderson case underlined the importance of the work they had been doing on devising ways to improve patient safety. But they knew that using the same grab-bag of solutions and

hoping behaviour would change was not the answer.

Struck by the major shifts that had come about through the tackling of environmental problems, the pair spent several years looking at how emissions trading schemes had managed to get big industries and governments to change their behaviours and agree to meet pollution reduction targets. Market-based incentives of financial rewards and penalties had led to system-wide changes.

Would it be possible to harness the same market forces to make the health system

"If a jumbo jet crashed every week, killing everyone on board, we'd understand we had a critical safety problem. That's the number of preventable deaths that occur in our hospitals ..."

safer? Could a patient safety price be set – much like the carbon price – and safety credits traded on a safety market? In effect, an emissions trading scheme for hospitals.

"It sounds radical but when you deconstruct it, it's all commonsense," Coiera says. "It's just like carbon trading. You set up a system and allow the marketplace to find innovative new solutions to the problem."

A paper outlining the idea was published recently in the *British Medical Journal's* publication *Quality and Safety in Health Care*.

For a market-based system to work, governments would have to support the project, Coiera says. Organisations such as hospitals and GP clinics would need a clear policy signal to reduce their rates of adverse events; they would be told by how much,

but would be free to find mechanisms that best suited their needs. The market would then generate novel ways of creating safety credits, and accountability would become hard to evade when adverse events were explicitly measured and accounted for in an organisation's bottom line.

Responses to the proposal have been mixed. For some, the idea throws up ethical concerns: Isn't it wicked to be "error trading" in a health context? Surely lives are too precious to be bartered?

"We know that after the excesses of Wall

Street, markets are on the nose," Braithwaite says. "But that's because the regulators fell asleep at the wheel, not because well-designed markets can't deliver."

At the very least, the pair would like to see a trial of their idea.

"If a jumbo jet crashed every week, killing everyone on board, we'd understand we had a critical safety problem," Braithwaite says.

"That's the number of preventable deaths that occur in our hospitals, by some estimates, every single week. Yet we wring our hands and mutter about the difficulties and the complexities of the system," he says.

"It's time to try something more radical. The complexity of a problem is not an excuse for inaction. Especially when so many lives are at stake." •

Mother of all challenges

A violent encounter with a patient had a profound effect on this doctor's career, writes Anabel Dean.

The destiny of Professor Marie-Paule Austin was determined during her second year as a junior doctor.

"I was sitting at the nursing bay in the psychiatric unit at Geelong Hospital, reading the file of a woman who was being treated for post-partum psychosis," she recalls.

"The patient came up behind me, put her hands around my throat and tried to strangle me. She thought that I was poisoning her with the medication we were giving her."

Fortunately, the attempt was thwarted, and the woman left the ward with her baby three weeks later. She was entirely well.

"It just made me think: 'Wow! That's what I want to do.' The patients can get well. When you go through psychiatric training as a junior, it can be quite confronting and frightening, but I came away thinking I can do something with this."

Austin has been true to her intentions. Under her stewardship, a national action plan was developed last year by beyondblue, recommending routine psychological assessments of high-risk women during pregnancy and the first year after the baby is born.

She has now been appointed to the first Chair of Perinatal and Women's Mental Health. This unique partnership between UNSW and St John of God Hospital in Burwood will foster research, policy and education in perinatal and women's mental health.

"We're really looking across the breadth of psychological and biological issues experienced by women during their reproductive years," Austin explains.

Research projects will include the study of reproductive hormones and how they may impact on premenstrual and perinatal mood syndromes. Further funding will be sought for projects similar to those already undertaken by UNSW and Macquarie University to investigate the impact of stress in pregnancy on infant development and mother-baby interactions.

Austin faced her own dilemma of whether to continue her career or bring up her children. She chose both. "I was seven months pregnant with my first child when I fronted up for my oral exams as a 29-year-old psychiatry registrar," she recalls.

Austin passed, and within six months was at the Royal Edinburgh Hospital. "When we landed in Scotland it was snowing. We'd come from 30 degree heat in Melbourne and didn't know anyone. After a couple of years we made an inroad into a social life ... but it was very challenging at first, particularly with no support or family there."

In 1991, Austin returned to Australia for the birth of her second baby, and became consultant psychiatrist in the Mood Disorders Unit of Prince Henry Hospital. By 1998, she was working as consultant psychiatrist at Prince of Wales, and at Royal Women's Hospital.

Austin was born in Paris and migrated to Australia at the age of nine. She saw the anxieties in her mother, who did not adjust easily to the changes nor speak the language.

Austin's Australian father was a "terrific" parent and "really made the whole thing work" for his children. Years later, Austin was able to reflect that her mother "was doing her best" under the circumstances.

"When a mother has her own child she intuitively looks back and questions, 'How was it done for me? Who do I model myself on?' If the connection was lacking, the vulnerability is there, and that's something that we will continue to investigate in our perinatal work.

"There's always a second chance," Austin concludes. A chance for families to build the foundation of good mental health is just what the doctor ordered. •



Hands-on experience:
Professor Austin with
newborn, Peter Owen.



Spotlight falls on solar-cell's inventor

Solar cell chosen as brightest invention

Solar-cell inventor Professor Stuart Wenham has won the top prize at the 2009 Inventor of the Year Awards hosted by New South Innovations, UNSW's technology commercialisation company.

Wenham is a world-leading solar-cell inventor who heads the University's ARC Photovoltaic Centre of Excellence in the Engineering Faculty.

In a career spanning more than a quarter of a century, he has invented or co-invented eight suites of solar-cell technologies that have been licensed to manufacturers around the world.

More than 200 leaders from business, media and research organisations attended the awards evening on 23 April at UNSW's John Niland Scientia Building. The event was hosted by ABC Television's *New Inventors* presenter, James O'Loghlin.

"The standard of excellence among the finalists at these awards was first class and I'm humbled to have been chosen top inventor," Wenham said. "I think the focus of these awards upon successful commercialisation is encouraging to researchers who want to make a market impact for their innovation that goes a step beyond basic and applied research."

Eleven UNSW inventors were short-listed as finalists in four categories: biomedicine; science and engineering;

the environment; and information and communication technology. The winners of each category were nominees for the Inventor of the Year Award.

Professor Philip Hogg won the biomedicine inventor award for devising a drug known as GSAO that could stop tumours by "starving" them to death. The drug is in clinical trials with Cancer Research UK. Hogg heads the UNSW Cancer Research Centre.

Professor David Taubman won the information and communication technology inventor award for his compression software. Known as Kakadu™, it allows users to view an entire low-quality image or video while downloading only a tiny fraction of a massive file. Taubman heads the Telecommunications Research Group in the Faculty of Engineering.

Professor Veena Sahajwalla won the science and engineering inventor award for her injection technology that recycles steel from discarded car tyres ... Sahajwalla heads the Centre for Sustainable Materials Research and Technology in the Science Faculty. •

By Dan Gaffney

TV Watch the video on UNSWTV's Science and Technology channel at www.tv.unsw.edu.au

Brain power gets a boost

Research into child psychiatry and schizophrenia at UNSW has been boosted with the appointment of two prominent academics.

Professor Vaughan Carr takes up the newly established Chair of Schizophrenia, Epidemiology and Population Health in May. Carr is a leading expert in schizophrenia, with 30 years' experience in mental health research. He has been scientific director of the Schizophrenia Research Institute since 2004 and CEO since 2007. He has held numerous National Health and Medical Research Council and other research grants, and has more than 140 publications in a range of fields including schizophrenia, substance abuse, early psychosis, post-traumatic stress disorder and depression. He was previously Professor of Psychiatry at the University of Newcastle and Director of the Centre for Brain and Mental Health Research.

Also joining UNSW is Professor Rhoshel Lenroot, who will take up the newly established Chair of Infant, Child and Adolescent Psychiatry (based at Prince of Wales Hospital). Lenroot is a leading expert in brain imaging of children and adolescents, with a focus on schizophrenia, autism and the trajectory of normal brain development. She was previously working as a Clinical Research Fellow at the National Institute of Mental Health in Maryland, USA. •

World Cup fever

UNSW's Football United has been invited to take part in the FIFA World Cup festivities in South Africa next year.

Football United is an initiative of Anne Bunde-Birouste from the School of Public Health and Community Medicine, which helps assist young refugees in their immigration and integration to Australia.

UNSW's team is one of only 32 invited to participate in the 2010 Football for Hope Festival, an official event of the FIFA World Cup.

Four girls and four boys from Football United will participate.



Aussie, Aussie, Aussie: One of the coaches of UNSW's Football United, Gode Migerano, with founder Anne Bunde-Birouste.



The shape of things to come

Good design makes life better. It's where great ideas take usable form. Five design concepts from industrial design students in the Faculty of the Built Environment (FBE) provide smart solutions for situations ranging from meeting life's most basic necessities to coping with some of its most extreme challenges.

Clean water, sustainable transport and safety – for children's strollers, at-risk firefighters and extreme surfers – are addressed in these designs, which took out five of the 13 finalist positions in the Australian James Dyson Award, Australia's premier design award for tertiary students.

The five UNSW finalists comprise the strongest showing by any university in the nine-year history of the Dyson Awards. The Head of FBE's Industrial Design program, Associate Professor Oya Demirbilek, notes that UNSW has a strong tradition of high achievement in the awards.

"I think we do quite well every year in the Dyson competition, because here the students learn to design for real needs – and they use design to solve real-world problems," she says.

Good design is not just about appearance or functionality in isolation. Demirbilek calls the design process "three-dimensional problem-solving".

"Good design makes everything else easier, including usage – the purpose of the object is obvious, you don't need to read the manual.

"I'm always amazed at how different the solutions our students create may be and how clever they are every time. People should be able to see by the breadth of products that designers can touch people's lives in such a variety of ways."

The 2009 winner of the Australian James Dyson Award is due to be announced on May 29. All finalists are contenders for the international James Dyson Award, to be announced in September. •

By Peter Trute



Watch the video on UNSWTV's Engineering and Design channel at www.tv.unsw.edu.au



From top left:

Project name: mAIRine

Designer: Grant Humphries

Description: A safety wetsuit jacket for big-wave surfers in extreme conditions. A back-mounted air canister and arm-mounted mouthpiece allows for self-rescue while an inflation bladder provides emergency flotation if the surfer is knocked unconscious.

Project name: Squad Firefighter Positioning System

Designer: Roy Hareguna

Description: An indoor positioning system that allows firefighters to keep track of each other in low-visibility indoor fire situations. Squad also provides sonar-generated maps of the surrounding area. Strong construction and ergonomic controls allow ease of use even with heavy gloves.

Project name: Ugo automatic pram safety brake

Designer: James Wansey

Description: The Ugo safety brake stops prams and strollers accidentally rolling away. A small unit carried by the parent links wirelessly to the wheel hub unit on the stroller. If the wheel unit moves further than two metres from the parent unit, brakes are applied automatically.

Project name: Solaqua

Designer: Jason Lam

Description: Solaqua is a water disinfection unit designed for use in rural sub-Saharan Africa. By filling the tanks and spreading the unit in sunshine, UV and infrared light from the sun eliminates pathogens in contaminated drinking water.

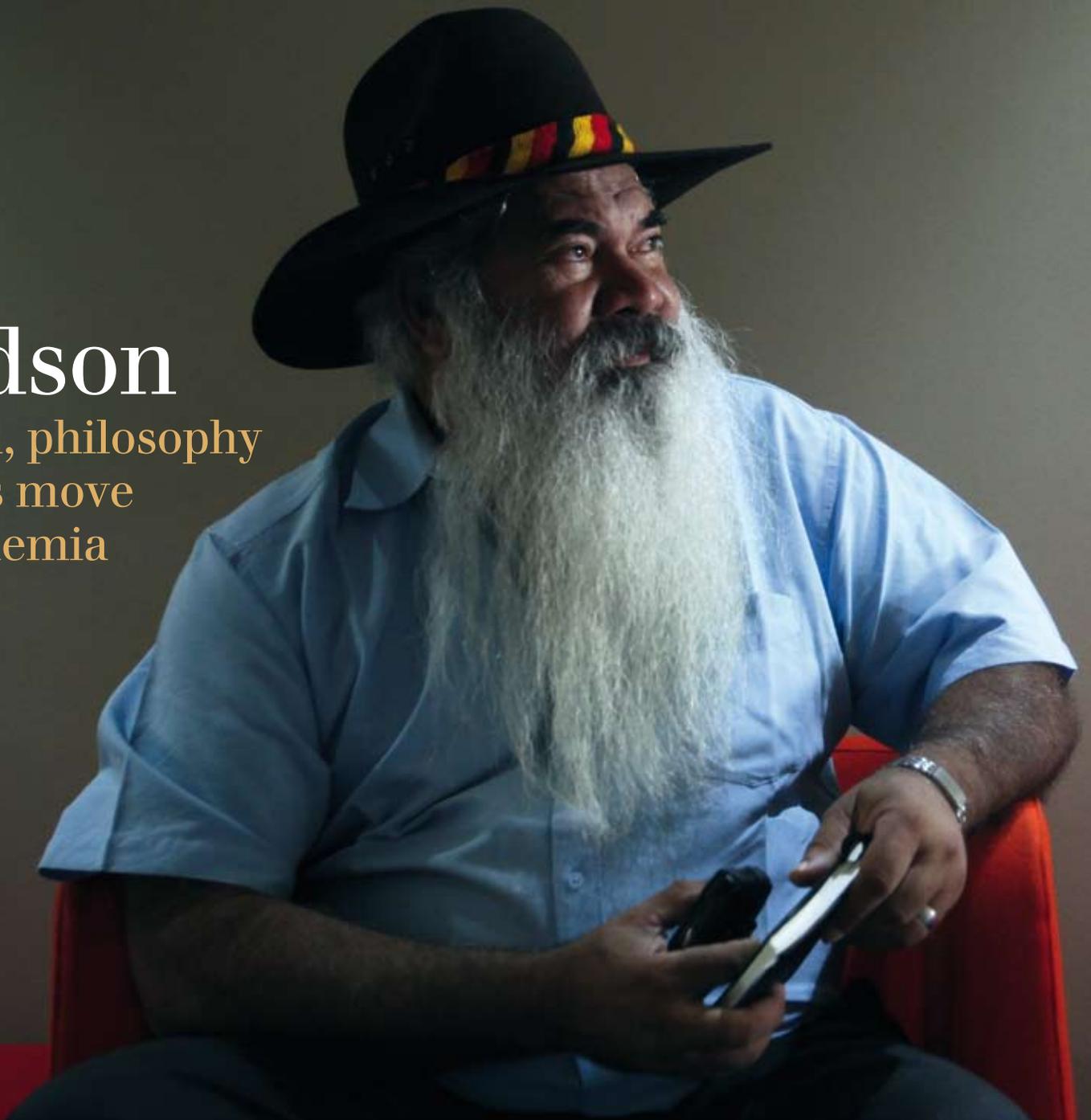
Project name: Link Urban Scooter System

Designer: Anton Grimes

Description: A network of publicly available electric scooters for travelling in city environments. The Link system comprises a number of hubs, allowing users to take a scooter at one point and ride it to another where they can return it to its charging station. Link is designed to be fitted to existing lightpoles.

Pat Dodson

on God, philosophy
and his move
to academia



In an Australian first, UNSW's Professor Pat Dodson is tackling Indigenous issues through whole-of-country dialogue underpinned by policy research. Susi Hamilton reports.

Pat Dodson wears several hats. There's the broad-brimmed, black Akubra that is ubiquitous in all Dodson's public appearances.

Then there are the other "hats" he wears as a former priest, the one-time Chairman of the Council for Aboriginal Reconciliation and Commissioner into Aboriginal Deaths in Custody, Sydney Peace Prize winner and now Professor at UNSW.

If there is one thread connecting all those achievements, it is leadership. In an academic sense, his leadership will help steer UNSW's newly created Indigenous Policy and Dialogue Research Unit.

"I think it's time for a national dialogue about our underpinning philosophical basis as we redefine our identity and role in a globalised society," he observes.

"This is not just about Indigenous affairs,"

says Dodson. "This is about all Australian people having a say."

The stakes are high. Asked if he'd like to have an influence on government policy in relation to Indigenous people, Dodson scoffs.

"I'm thinking much bigger than that," he grins. "Ultimately, we'd like to see a treaty or even constitutional reform."

The work has already begun. Dodson has just hosted the first regional dialogue in the Kimberley, involving business leaders, government representatives, Indigenous people and other community members.

The plans to build a major gas plant off the Kimberley coast were a major focus of the talks, with some Aboriginal people expressing concern that the development might lead to some of the same problems experienced in the Pilbara.

“Where is God? He’s everywhere, isn’t he? You don’t have to go into a church to find him.”

“The mining went ahead there, but there was little tangible benefit for the Indigenous community,” he says. “We don’t want that to happen again.”

The dialogue is “not a talk-fest,” Dodson declares. “It’s about developing an interface between key stakeholders. Too often local communities feel excluded from policies and decisions that directly affect their daily lives.”

The Northern Territory intervention is an example of the kind of “top-down” approach he hopes to avoid.

There’s no doubt this is an ambitious project. Reconciliation on this scale is something people have been working towards for generations, but it has so far proved elusive. Nonetheless, Pat Dodson has taken on big challenges in the past. When he became involved in land rights campaigns as a young

Catholic priest, it got him into “strife” with some of the clergy.

He eventually left, due to the restrictions of the church and differing views on reconciliation, but says he’s still a believer.

“I rarely attend services. I guess I’m a bit more like my grandfather,” he says. “Where is God? He’s everywhere, isn’t he? You don’t have to go into a church to find him. I have a very liberal view of what it all means.”

He speaks of the wrench of leaving the church, but then finding a new purpose in life in the political realm. “You have to decide in your own mind about what you need to do to remain true to who you are and your purpose – to the extent that you understand it,” he laughs.

Broome might be home, but the 61-year-old Yawuru man spends a lot of time away. The part-time position at UNSW will take him to many regional communities as well as regular visits to the Kensington campus. He also chairs the board of the Kimberley Development Commission and heads the Lingiari Foundation – an Indigenous non-government advocacy and research group.

While Mick Dodson, who is currently Australian of the Year, has moved in academic circles for years, it is a new realm for his older brother.

“I periodically have some discussions with Mick, but he does his own things,” says Pat Dodson. “He’s a lawyer, so he has a different way of looking at things. I’m more philosophical and I have a broader-based approach.”

Dodson sidesteps questions about personal motivation and family connections, steering questions back to topics closer to his work. But the Dodson family’s story is well known. Their mother died when they were young and they were orphaned when their father died in 1960. Pat and Mick were made wards of the state, but their sisters decided the boys should accept scholarships to study in Hamilton, Victoria.

While education clearly had a role in why the Dodson boys both became so prominent politically, it doesn’t explain their success completely. “I think it comes from the early stages of injustice, when you had a non-native protector who had total right and power and autonomy to determine your life,” Dodson says.

“They decided where you lived, who you could marry, how you conducted your domestic affairs, who could remove your children, who could decide everything, such as where your garbage bin needed to go at the front of your house.

“You come out of these sorts of moulds and you say, ‘This is not how human beings are meant to be treated, or what citizenship entitles you to enjoy, and there are other measures which we should be aspiring to.’”

Almost half a century after that first trek across the country, Pat Dodson made the trip

to the Prime Minister’s 2020 Summit, giving guidance on Indigenous affairs with a group of Aboriginal and Torres Strait Island community members, activist organisations and a smattering of academics, including UNSW’s Sarah Maddison.

Maddison was struck by Dodson’s commitment and compassion.

During a chance conversation soon after, it became clear to Maddison, the Senior Associate Dean of the Faculty of Arts and Social Sciences, that a collaboration was possible.

“A colleague of Pat’s said as a throw-away line, ‘We’re thinking that the dialogue needs an institutional base,’” she recalls. “I went to the bathroom and had this flash – ‘I have an institution!’”

Within a year, Dodson was on campus at UNSW, getting his staff card and being inducted by the Human Resources Department.

Indigenous studies is not unusual in academia, but UNSW’s approach is. It involves two components: a whole-of-country dialogue, plus policy research. The Unit is based in the Social Policy Research Centre, but within three years it is hoped there will be a stand-alone centre.

The dialogue process is also an Australian first. It follows a model that has proved worthwhile in South Africa, Indonesia and Guatemala, although it hasn’t been as successful in Canada.

The Dean of Arts and Social Sciences, Professor James Donald, said one of his personal highlights of 2008 was hearing Dodson give the Sydney Peace Prize lecture at the Opera House – an address that showed him the possibility of new philosophical underpinnings for the nation.

Donald says that the research combines social engagement and social justice on a pressing issue that “may just change the course of Australian history”.

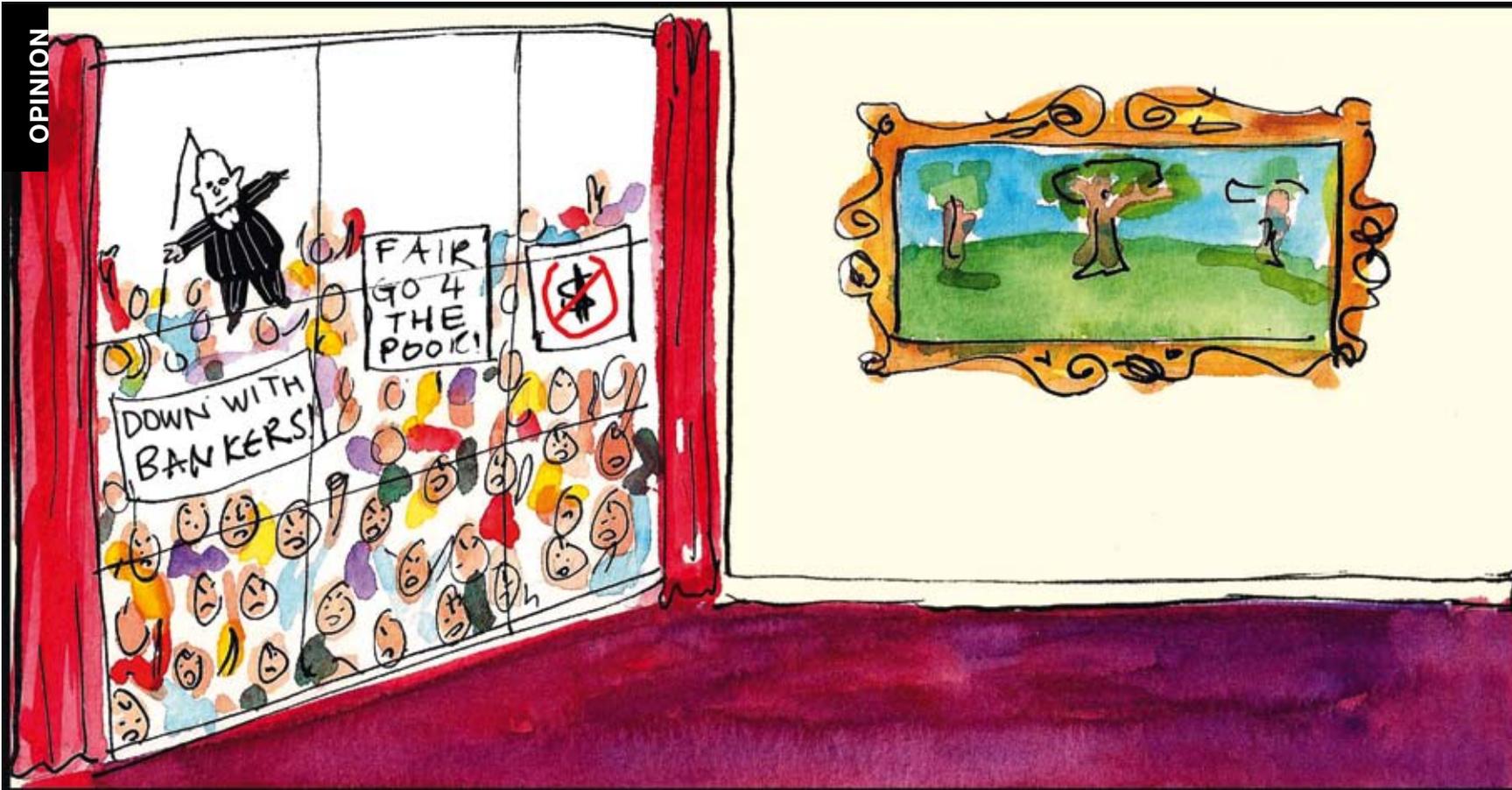
When asked about his favourite achievement – the Sydney Peace Prize notwithstanding – Professor Dodson scans the Library lawn quickly and says, “I think this adventure of coming to university. It is challenging, but it is also reminiscent of the eight years that I spent in the seminary, which was a very rewarding, studious period of my life.”

And then there’s *that* hat. Is it symbolic, is it purely practical – what does it signify to him?

“I’ve worn a hat for many years, in part from a practical perspective because I live in the north and it keeps the sun from my face,” he smiles. “It is a reminder that Aboriginal people are part of this country – and particularly the band, which was knitted by my older sister. It’s second nature to me – I feel a bit undressed when I don’t have it on my head. I get very annoyed when I see people carrying a hat instead of wearing it!” •



Watch the video on UNSWTV’s Arts and Society channel at www.tv.unsw.edu.au



The G20 Rescue: Economic stimulus or financial disaster?

As the global financial crisis roared on, the leaders of the world's 19 largest economies, plus the European Union, met in London to considerable fanfare. However, there is little consensus about what was achieved. Peter Swan, Professor of Finance in the Australian School of Business says the G20 offered precious little, while Peter Kriesler, Associate Professor of Economics argues the meeting changed the nature of policy debate.

Perhaps because of the failure of the G20 Summit to agree on anything of substance other than a revamp of the hugely unpopular International Monetary Fund (IMF), stock markets around the world applauded the announcement. This was the mirror image of the US stock market response to the earlier stimulus package initiated by President Barack Obama that depressed prices by a sizeable amount. Markets seem to understand that bribes paid out of the public purse to promote mindless spending are simply a continuation of the subprime-led spending splurge.

Predictions that the Summit would "save the world" from the global crisis with a new global stimulus have come to naught. Both the US and Britain are nearing their limits in terms of their ability to create new public debt that is supposed to revive falling economic activity. There has been singularly little success to date. Obama's budget plans will saddle taxpayers with an additional US\$6.5 trillion in debt or \$165,000 (after interest, \$200,000) for every tax-paying family. Surely, this increased indebtedness is a heavy dampener on new effective demand in the form of consumption and investment?

Similarly, the British Government is encountering difficulties borrowing more to finance the huge bailout and stimulus bill.

Massively higher public debt levels are a continuation of rising debt levels from the era of the subprime crisis. The difference is that the burden is now being shifted to the taxpayer. The Australian taxpayer is unknowingly becoming more beholden to banks as Prime Minister Kevin Rudd's guarantee enables investment banks, as well as regular banks, to borrow tens of billions of

dollars more. Rudd's intervention is promoting excessive risk-taking, not providing a cure.

The bailing out of banks globally convinces bankers and shareholders alike that they are "too big to fail". This also encourages excessive risk-taking and extreme debt/equity ratios. The subprime crisis arose out of the ashes of the bursting of the dotcom bubble. The Federal Reserve lowered interest rates and shovelled cash into the economy while the US Government either implicitly or explicitly underwrote much of the lending and risk-taking.

Under the G20 plan there will be no immediate re-regulation of global financial markets. Instead, there will be a new body created, the Financial Stability Board, to advise domestic regulators when excessive risks are being undertaken. Perhaps fortunately, this new body is little more than window dressing as it has no powers of enforcement.

New regulatory oversight of insurance companies and hedge funds is to be placed on the drawing board. Mr Rudd claims that rules to be introduced on bankers' pay and rewards for risk-taking will crack down on "cowboys" in global markets. This is despite the lack of any evidence that deficiencies in CEO remuneration contracts played a major role in the debacle. Ironically, one of the few studies to examine firm riskiness and corporate governance finds that stronger shareholder protection is associated with higher firm-level riskiness and higher firm growth.

As part of his assault on bankers to gain the popular vote, is Mr Rudd proposing to reduce both shareholder protection and company growth?

Mandating more deferred pay in the form



of equity or options in lieu of cash bonuses sounds appealing. But the outcome would be to have politicians and regulators usurping the role of the company board. Alternatives that need to be examined include giving shareholders more of a role beyond that of the existing non-binding vote on CEO pay, or strengthening the role of independent directors on boards.

I expect we will soon see more G20 summits. This will not be because of constructive outcomes to date but rather because it provides politicians with a great photo opportunity and the appearance, if not the reality, of doing something. •

Professor Peter Swan

The global economy is in a mess. Almost every week, new headlines suggest that the situation is deteriorating at an accelerating rate. The most obvious symptom is the global financial crisis. The problems, however, go much deeper, and are the result of increasing reliance on policies based on neo-liberalism or economic rationalism.

It is important to stress that most Western government economic policy has been dominated by neoclassical economics for the last 50 years. This translates into a vision where unrestrained markets work well at delivering optimal economic outcomes, including full employment and growth. However, in the 1950s John Maynard Keynes showed that, in fact, markets were unable, by themselves, to deliver either of these. The problem is not the level of wages, but rather insufficient demand, which required some external stimulus, either from abroad or from governments to fill the shortfall. From the end

of the Second World War to the early 1970s, governments were influenced by Keynes in their economic policies. The result was the Golden Age of growth – the longest period of sustained growth in output and employment in the capitalist world

From the 1970s, however, neoclassical economics reasserted its view of the superiority of markets, with an emphasis on deregulation, smaller government and lower taxes. The current global financial crisis is a direct result of that policy, with the lack of regulation of the financial sector, accompanying significant reductions in public sectors around the world. The net effect of these policies has been an increase in the myopia of markets leading to more risky investments, the failure of governance in establishing the real value of assets – as with the subprime mortgages – and as a result the collapse of asset prices, and of confidence on a global scale. These have led to substantial falls in aggregate demand, causing falls in output and employment levels. Current predictions are that global unemployment rates will reach levels not seen since the Great Depression.

The three most important problems for the G20 were to restore global demand, to fix the global financial system, and to work out a new system for international trade.

While the G20 has acknowledged these problems and discussed potential solutions to them, unfortunately it has taken only very tentative steps in the formation of policy.

With respect to the first of these, the G20 talked about but did not implement the possibility of coordinated expansion of economic activity. Rather there was a commitment to inject US\$250 billion in trade

finance into the global economy over the next two years, through a number of global institutions.

The G20 also started down the track of reforming the global financial system, with the regulation of hedge funds and rating agencies and the establishment of the new Financial Stability Board, but it lacked commitment for truly far-reaching reform.

On trade it did very little, though the initiatives involving reformation of and increased liquidity for the IMF were a start to addressing trade problems that may arise due to countries developing balance of payments difficulties.

The G20 also agreed to curb excessive remuneration for executives. The problem with the remuneration of executives is not only that the salaries paid have little bearing on their actual contribution to the companies, but also that it encourages executives to be myopic, to worry more about the present share value of the company than with any longer-term considerations. Most executives realise that in the long run, they are likely to be elsewhere, so why not engage in risky activity. If it succeeds, then they are paid more. If not their retrenchment packages – unlike those of other employees – are guaranteed. Hence, curbs on executive pay are welcome.

In the end, the G20 meeting achieved little in the way of concrete action, but achieved more in changing the nature of the policy debate, and the outlook for future agreements. By acknowledging the importance of government action, both in stimulating demand and in regulating finance, it has taken the first tentative steps to much needed reform. •

Associate Professor Peter Kriesler

Healing the scars inside

Australia becomes home to thousands of refugees each year. Each one of them has special needs if they are to make this their home. Fran Strachan reports on a new training course that helps smooth the way.

More than 15,000 refugees arrive in Australia each year fleeing war and persecution in their countries to establish new lives in a foreign culture. Sudanese community worker Joseph Makuei was one of them.

After escaping the civil war in Sudan in 2005, Makuei settled in Sydney with his wife and family, but adjusting to Australian life was difficult and at times just as painful as fleeing his homeland.

"I was traumatised, I missed my home, I didn't know whether the rest of my family were safe and I was constantly discriminated against," he says. "I thought I'd fled from trauma but I was experiencing the same things all over again, here."

Six years on, Makuei is using those isolating experiences to assist other refugees in his role as a community worker for the Sudanese Men and Families Project at the SydWest Multicultural Centre in Blacktown.

"We offer additional support to Sudanese families by providing information sessions on healthcare, legal aid, and social and cultural differences," he says.

It takes the skills and empathy of community workers like Joseph to ease the transition to Australian life for refugees.

Eileen Pittaway, Director of UNSW's Centre

for Refugee Research, believes community workers in this area often require extra training to hone what is increasingly becoming a specialised set of skills.

She has developed a training course for workers who deal with refugees, based on the extensive experience she has had in training refugees, displaced persons, UN and NGO staff in refugee camps in Kenya, Thailand, Ethiopia, Bougainville, Egypt and Sri Lanka.

"Many Australian community workers doing this work feel under-trained. A lot of refugees have been in camps for up to 20 years before they even arrive in Australia. They have literally existed in a 'living hell' and their needs are very specific. Workers need extra training to provide them with the appropriate skills to deal with this," says Pittaway.

Makuei attended the Centre for Refugee Research's first Summer School this year and believes it taught him invaluable skills about minimising the isolation felt by many refugees.

"Successful integration must be based on practical and long-term solutions," he says. "It is not enough to show them Centrelink or the bank, or Medicare, we need to teach them how to completely engage with the community. There's no point having the money for three meals a day if every one of them is eaten inside your house, alone."

Makuei believes that studying English at TAFE and then completing a BA of Economics were a central part of his integration and he encourages his clients to continue their education in Australia.

The success of the first Summer School confirms Pittaway's belief that workers in the field require more training in this area. Her teaching focuses on innovative consultation techniques that encourage workers to engage with the needs of their clients.

"This isn't about us sitting back as the 'white experts' and saying, 'Oh they're lonely, let's organise a community festival'," Pittaway says. "It's about finding practical solutions to the problems of refugees that have longevity and positive outcomes. It is the refugees themselves who best know what is needed."

The number of refugees, like Makuei, being trained to assist others in the same situation is gradually growing.

For Makuei, past experience as a refugee gives him an instant rapport with his clients, who share the same emotional scars.

"I want to keep doing this work for years to come – then I can be a useful community member," he says. "When my clients meet me they think, 'He's one of us', and it motivates them to see a future for themselves in Australia." •



Photo: Patrick Cummins

The eyes have it

One Aboriginal optometry student is determined to close the gap on Indigenous health. Dan Gaffney reports.

Jenna Owen is heading for a double first. She is the first in her family to attend university and when she completes her studies in 2010, she will become the first Indigenous optometrist in New South Wales. Victoria is home to Australia's only other Aboriginal optometrist – in a nation where 20,000 Indigenous children have trachoma, a preventable cause of infectious blindness.

The 21-year-old from Dubbo is supported by the Puggy Hunter Memorial Scholarship, which aims to redress the under-representation of Indigenous Australians in the health professions. She is also a beneficiary of a scholarship for Indigenous students administered by UNSW's Shalom College, Nura Gili and the Muru Marri Indigenous Health Unit.

Owen plans to work in her home town, Dubbo, where she will be among the first of a new breed of optometrists with added responsibilities. Like general practitioners, these graduates will be able to prescribe drugs and other therapies so patients receive a seamless eye care service.

"Working as an optometrist in rural and regional Australia provides more challenges and opportunities compared to urban centres," says Owen. "There's a broader range of clinical issues to manage."

She's already putting her studies into practice. As part of the teaching program at UNSW, optometry students in fourth and fifth years do consultations with the public through the University's Optometry Clinic. The services are free. Students also do two two-week training sessions with practising

optometrists – one session in the country and the other in the city. UNSW is the only university in the state to offer training for students wanting to become optometrists.

Owen notes that people in regional areas travel vast distances for essential services like health and education. "I want to be part of the solution to that problem," she says.

There was no local school in Owen's childhood town of Albert, 150 kilometres west of Dubbo, so she would spend an hour on the bus each day to attend classes in Tottenham, a town of just 300 people. It wasn't until Year 8, when her family moved to Dubbo, that she had the luxury of choosing which school to attend.

This is why she feels privileged and driven to succeed, she says: "I couldn't have got this far without the faith and support shown to me by my family, friends, University services, and the generous people who administer scholarship-granting bodies."

She intends to use her skills among the Aboriginal community in Dubbo, because "it's important for Indigenous people to have the opportunity to consult health professionals who have an understanding of their values and culture".

Dubbo optometrist Tony Burgun first met Owen as a 15-year-old who would accompany her mother for eye testing. "She would come in to the clinic after school to watch me at work and she always asked lots of questions," he recalls. "That's when she began to set her sights on becoming an optometrist. She's a mature and dedicated young woman who'd be a

great asset to the [Dubbo] community."

Eye care manufacturer Luxottica recently announced a \$60,000 scholarship for Indigenous optometry students at UNSW.

"This new scholarship program will allow greater access and more opportunities to promote eye health to Indigenous communities," says the company's chief executive, Chris Beer. "This is vital given that Australian Aborigines and Torres Strait Islanders suffer one of the highest rates of diabetes of any population group in the world – a condition that can pose many serious eye health risks, including blindness."

In February this year, the Commonwealth Government announced \$58 million in funding and services to tackle eye and ear diseases in Indigenous communities. •

A first for Indigenous medical students

Some of the most significant Indigenous scholarships in the country have been awarded to UNSW medical students.

Tyron Clayworth, Kyharne Biles and Andrew Julian will each receive \$25,000 a year for the duration of their six-year medical degrees, courtesy of the Balnaves Foundation.

The Foundation's chief, Neil Balnaves, said he decided to finance the scholarships after seeing first-hand the deprivations in some Aboriginal communities.

A constitution for change

A family-based decision by Professor Theunis Roux to leave South Africa has brought considerable strength to UNSW's public law team.

Steve Offner reports.



Life cycle: being able to ride a bike to work is a new and welcome experience for Professor Theunis Roux.

A bicycle helmet sits next to a pile of papers on Professor Theunis Roux's desk. For the legal academic and former director of the South African Institute for Advanced Constitutional Law, the freedom to cycle to work has a special significance.

"It's one of those lifestyle things that Australians take for granted," he says. "It's something I could never have done in South Africa."

It's been a rapid induction into Australia for the quietly spoken academic. Just six months after accepting a UNSW professorial position, Roux has moved country, found a place to live and is ensconced in his job, which includes teaching undergraduates the foundations of the Australian legal system.

Like most émigrés, Roux's decision, made together with his novelist wife, Gill Schierhout, to pack up their two young daughters and

leave their home was a difficult one.

"South Africans, particularly white South Africans, find the whole business of leaving their country quite fraught," he says. "It was a family decision about where our daughters' and our own futures would be most secure in a 20- to 30-year time frame."

His experience, he says, tracks those of many other left-liberal lawyers in South Africa. "A 15-year trajectory of grand optimism about the constitutional changes in 1994 and what could be achieved – and then progressive disillusionment.

"I could have stayed and tried to adjust to the less-utopian reality that had been dawning over the past two or three years. But in the end it was clear that Australia offered a better, more secure future."

Professor David Dixon, Dean of the Faculty of Law, says South Africa's loss is very much

There was grand optimism about the constitutional changes in South Africa in 1994 – and then progressive disillusionment.

UNSW's gain. Roux's expertise extends well beyond the black-letter areas of constitutional law. In South Africa he was Extraordinary Professor at the University of Pretoria's Centre for Human Rights and the founding director of a leading independent public law centre. As legal advisor, he helped the Government with some of its most sensitive reforms: land restitution, tenancy protection for farm dwellers and tenure options for low-income housing.

"The international strength that he brings to our public law team – not just his South African experience, but also in Europe – is outstanding," Dixon says. "Appointments of this quality are what the Faculty's strategic direction is all about."

Roux's public law credentials mirror UNSW's other well-known constitutional expert, the Gilbert + Tobin Centre of Public Law's Professor George Williams. However, Roux laughs at the comparison.

"I am teaching federal constitutional law this year – and I'm trying desperately to form an opinion on the bill of rights debate – but there's not much chance that I will be as outspoken as George," he says.

Roux's main interest is in the politics of judicial review in new democracies, particularly the record of the South African Constitutional Court. The research combines traditional legal research with political science approaches to explain the Court's apparent success in establishing a reputation for principled decision-making despite threats to its independence.

"Courts in new democracies face challenges that those in established democracies do not," Roux says. "Political scientists tend to downplay the extent to which legal doctrine constrains judges' room for manoeuvre. Nevertheless, there is considerable evidence emerging that constitutional courts in new democracies do act strategically, which is not necessarily incompatible with the tenets of liberal legalism.

"Even judges who are committed to doing individual justice may exploit gaps in legal doctrine to protect their court's role in the political system."

Roux plans to continue this research from Australia. Paradoxically, he feels his émigré status will enhance this work. In South Africa, along with simple things like riding a bike to work, much of his research had become impossible.

"Some things are easier to do from a distance," he says. •



The brains behind artificial intelligence

Artificial intelligence isn't about sinister computer entities scheming to take over the world, says Dr Malcolm Ryan, lecturer in the School of Computer Science and Engineering. Rather, it's all about making giant robots work more safely, more realistic games ... and maybe cracking the secret to writing a best-selling novel. Oh – and helping frail rehabilitation patients experience the joys of skydiving. He spoke to Peter Trute.

Part of my research is focused on the giant stevedoring robot cranes which work on our ports. I'm writing artificial intelligence (AI) algorithms to control large groups of robots so they can move around without running into each other.

Many of the exact same problems that happen on the port happen in a computer game. We have a large number of agents: on the port they're enormous, multi-tonne cargo robots, in a computer game they might be monsters or tanks or whatever; but in each case we have a large number of agents that need to move around a space without running into each other. The more agents that we can control, the more cargo we can move or the more people we can have in the game.

In computer games often the worlds are very empty – there just aren't as many people as there would be in a real situation. The limiting factor is the AI: we just can't control that many at the same time. Hopefully, with the progress that I'm making, we'll be able to create a world that feels like it's more inhabited and feels like a real place.

We're also using games in working with elderly people who may have had a fall or a hip injury and who need to rehabilitate their balance. They have to do exercises and typically those exercises are boring and repetitive. We're interested in incorporating those exercises into a fun computer game. We asked the elderly people what they thought was fun and got a lot of different ideas: one was a maze game, one was a gardening game, and another one was a skydiving game!

We're using the Wii-fit balance board which allows us to measure how people move from side to side. Our current prototype is a maze

game where two players have to cooperate to pick up treasures in the maze. It's called exergaming – we've been playing it at a nursing home and people love it.

I write in my spare time but I'm looking at applying AI to the writing process. We're trying to understand what makes an interesting story, something that narrative theorists have been working on for a long time. We're trying to take it a step further and ask – knowing what is suspense and what is drama – could we then make a computer which understands these terms and is able to use them to understand stories, maybe to tell stories.

It's not having the computer replace the author; it's giving tools to the author to make more interesting, interactive, creative works. We have no desire for – and I don't think we ever will have – computers to tell stories completely from scratch. What we want is to make richer games and interactive experiences, and to do that we need some understanding of how the stories work.

Think about computer graphics. Generations of knowledge about lighting effects, perspective and animation have now been encoded into computer programs. Has this made human artists obsolete? Not at all, but it has opened up the possibility for astounding CGI animations and special effects. I want to do the same thing for textual narrative. The rules of plot and character are much more subtle and complex than those of light and motion, but I believe we can do it. •



An interview with Malcolm Ryan can be seen on the Engineering and Design channel of UNSWTV at www.tv.unsw.edu.au.



Name: Yolande Kyngdon

Age: 24

Faculty: Arts and Social Sciences

Research: My Honours thesis is looking at the feasibility of establishing a fair trade diamond industry, something that does not exist anywhere in the world. While there are “conflict free” diamonds, the profits of which do not support rebel forces or violent regimes, a fair trade diamond industry would also help facilitate the emergence of developing economies and enable access to healthcare for employees; this would in turn strengthen communities and help stop preventable diseases such as HIV and cholera.

Inspiration: I worked in the jewellery industry for six years, which made me realise how cut-throat the diamond industry is. I am also a supporter of fair trade products more generally, as fair trade empowers people rather than throwing money at them. My initial research shows that almost a third of customers would be prepared to pay more for a fair trade diamond. Generally, fair trade products cost about 20 percent more than similar products that are not fair trade. I hope to work out from my quantitative data how much people are prepared to pay for such a significant purchase. A fair trade industry seems appropriate given that diamonds are a symbol of love and commitment! •

Go to www.fairtraderesearch.com to take part in the study.

Thanks to Mardo jewellery, Randwick

She spoke to Susi Hamilton.