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uniken

Out of Africa

*New light on
human evolution*



UNSW
THE UNIVERSITY OF NEW SOUTH WALES

Our link with the Opera House • New tricks find oldest dog

ON THE COVER

6-8 Out of Africa

New light is being shed on the evolution of modern humans in Africa and our scientists are at the forefront of the developments.

FEATURES

5 Out of site

Research from the Australian School of Business has been opened up to a potential global audience of almost six million people. The School has launched its online journal, as part of the Knowledge@Wharton Network

9 New tricks find oldest dog

The dingo looms large in the Australian psyche but now it is finding its place on the world map.

11 A landmark legacy

The longstanding link between UNSW and the family of the late architect of the Sydney Opera House has just been strengthened.

12-13 Opinion

The near agreement on hospital funding fails to deliver the major reforms our health system needs, argues Emeritus Professor John Dwyer.

14-15 Pushing ahead

People with disabilities often live on the fringes of society, but UNSW researchers are ensuring their voices are heard.

17 In profile

There's much more to research than lab coats and libraries, says the new Dean of Graduate Research, Professor Laura Poole-Warren.

REGULARS

10 Learning and teaching

16 Community engagement

18 **Noted:** new books and dates for the diary

19 Five minutes with ...

Philip To, COFA graduate and award-winning animator.

20 Early career

Cover: Kalahari bushmen of Namibia.

Photo: Stephan C. Schuster

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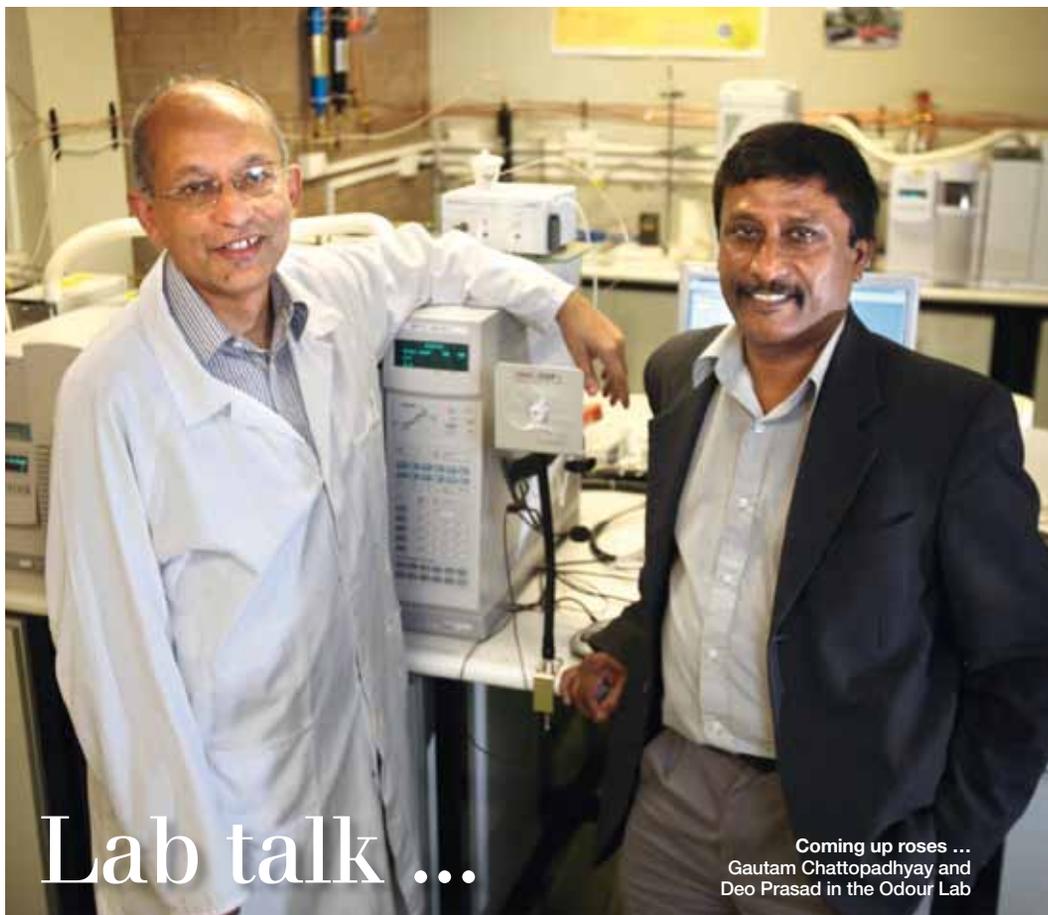
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Lab talk ...

Coming up roses ...
Gautam Chattopadhyay and
Deo Prasad in the Odour Lab

Dr Gautam Chattopadhyay lives and breathes his wonderfully named Odour Laboratory. He takes enormous pride in one piece of the lab's equipment that can test for thousands of volatile organic substances which can make people feel unwell when released into a built environment. These "off-gases" or "atmospheric emissions" are toxins which are released by furniture, carpets, building materials, and even the human occupants themselves. These can make people feel nauseous, lethargic or even sleepy.

Dr Chattopadhyay has been working with Professor Deo Prasad from the Faculty of the Built Environment, an international authority on sustainable buildings, to find out the link between a building's environment and people's productivity – and the results are dramatic.

The pair assessed two buildings in the city, occupied by the same leading financial group. Though well within the statutory guidelines, one building performed worse across a range of measures – including volatile organic substances, air quality, thermal environment, acoustic environment and visual environment – and as a result, it cost the company at least \$178,000 in lost productivity through absenteeism alone.

The pair have been working together for more than eight years now.

Professor Prasad:

The support we get from Gautam is brilliant. I'm really interested in an evidence-base for high-performance buildings and so support from Engineers like him is particularly valuable. We just wouldn't have that without them. I believe the next generation of innovative work in design and the built environment will come from multi-disciplinary work like this. We look at how 'green' buildings are and whether that translates to greater productivity. In some cases, we can show that the extra upfront costs pay for themselves – sometimes within a matter of days or weeks.

I call myself a "left-brain architect". I look for technological innovation and not just design sensibilities in a building. I also work closely with the ARC Photovoltaics Centre of Excellence.

Dr Chattopadhyay:

I have worked with Deo for so long now, he is a friend as well as a colleague. I really appreciate his flexibility, because it's sometimes as a technical staff member it's a struggle to fit in the research along with the management of the labs and teaching. I have over 30 years' experience in sampling analysis which I know he needs, but it works both ways. I enjoy the variety of work that I get to do with him – that's where cross-disciplinary work really gets interesting.

Gautam and Deo spoke with Susi Hamilton

To nominate a researcher and technician for "Lab talk" please email uniken@unsw.edu.au.

Rising stars

A UNSW researcher has been awarded one of the Australian Academy of Science's highest awards.

Professor Robert Brooks from the School of Biological, Earth and Environmental Sciences was given the Fenner Medal for work that has fundamentally changed the way scientists and the public think about the relationships between the evolution of sex differences, death and ageing.

He was one of five scientists to receive early career researcher awards at the Academy's Shine Dome in Canberra in May.

Another early career researcher winning accolades is **Associate Professor Nagarajan Valanoor**, from the School of Materials Science and Engineering. He was awarded the Royal Society of NSW's prestigious Edgeworth David Medal for 2009, recognizing outstanding achievement by a scientist under the age of 35. Valanoor works on nano-scale functional materials and thin film polar oxide structures. It is the second year running that the medal has been won by a UNSW researcher.

Photo: Paul Henderson-Kelly



Nanotechnology powers up

Australia's place in the international nanotechnology market has been strengthened with a new, \$10 million, state-of-the-art nanofabrication facility at UNSW.

Improved cancer treatments, new solar power technologies and a next-generation bionic eye are among projects enabled by equipment in the NSW Node of the Australian National Fabrication Facility (ANFF).

Operating in state-of-the-art cleanrooms, the facility provides nanofabrication tools, training and specialist advice to industrial, academic and government researchers working in nanotechnology-related fields.

Nano-scale devices, which can measure just a few millionths of a millimetre, have applications in areas from pharmaceuticals to building materials.

"The applications of this area extend to every field of scientific research. What we now have is a coordinated, national facility where researchers from universities, companies or governments around Australia can directly access world-class equipment," says NSW Node Director Professor Andrew Dzurak of the School of Electrical Engineering and Telecommunications.

Photo: John Yeats



Brain power ... Charlie Teo and Kerrie McDonald

The mental muscle fighting brain tumours

Australia's first research group dedicated to tackling the rising incidence of brain tumours has been established at UNSW, following a \$2.3 million donation by the Cure for Life Foundation.

The research facility, to be known as the Cure for Life Neuro-Oncology Group, will be led by renowned brain tumour researcher Dr Kerrie McDonald and based at UNSW's Lowy Cancer Research Centre.

The \$2.3 million funding will be used to drive research into malignant brain tumours – one of the deadliest forms of cancer – and develop the research group in neuro-oncology over the next five years.

The Cure for Life Foundation was established by neurosurgeon Dr Charlie Teo to help save the lives of people suffering from brain tumours, through advances in research and education in neurosurgery.

Formerly of the Kolling Institute of Medical Research, Dr McDonald was instrumental in establishing the Australasian Brain Tumour Bank. Her research focuses on identifying genetic markers predicting which brain cancer patients will go on to be long-term survivors.

Medical inspiration

Australia's first medical journal produced for and by medical students has been launched at UNSW.

The *Australian Medical Student Journal* is the brainchild of a group of UNSW students who have aspirations to encourage the next generation of medical researchers.

The inaugural issue features a number of guest contributions from the likes of Prime Minister Kevin Rudd, Australian of the Year Patrick McGorry and Australian Medical Association President, Dr Andrew Pesce.

It has attracted almost 100 submissions from 15 of the country's 20 medical schools.

For more about the journal, or to download a copy, visit www.amsj.org.

Prizes, pomp and prestige

Projects to search for planets beyond our solar system and to better understand the impact of climate change on Australia's groundwater resources have won five Super Science Fellowships for two UNSW research teams.

Only 50 of the prized new Federal Government awards were allocated this year across all of Australia's universities and research institutions.

A team led by **Professor Matthew England** of the Climate Change Research Centre won three fellowships for its project "Precipitation-groundwater interactions over eastern Australia: climate change impacts at multiple scales".

Professor Chris Tinney and his team from the Department of Astrophysics were awarded two fellowships for their project "A New Era for Australian Exoplanetary Science".

The Super Science Fellowships are aimed at attracting and retaining the best and brightest early-career researchers from within Australia and around the world.



Bright sparks ... Year 6 students at Haberfield Primary School take their first ethics class

Photo: Kate Geraghty, Fairfaxphotos.com

An ethical dilemma

The first of the controversial ethics classes, designed by a UNSW academic, have taken place.

Ten schools in NSW are taking part in the 10-week trial. The classes are being offered to students in Years 5 and 6 who do not take scripture classes.

"It's been an overwhelmingly positive response," says Associate Professor Philip Cam, from the School of History and Philosophy. "We've had so many emails, handwritten letters and phone calls and so many people want to volunteer as facilitators for the classes."

"While some of the faith-based groups are worried about a drift away from religious studies, this course would only be for those students who do not already participate in scripture."

Some of the questions to be considered by students include the ethics of hunting elephants for their tusks, exterminating rabbits or testing cosmetics on animals.

"I'm still keen to see a broader study of philosophy introduced into all schools as a part of the curriculum, but this is a great start," he says.

Philosophy for school students is under consideration as part of the revised National Curriculum.

"The Australian government still bears a moral responsibility for what happened to him." – Michael Grewcock, law lecturer, on a depressed father with known drug and alcohol problems who died from a heroin overdose two days after Australia deported him to Britain, *The Sydney Morning Herald*

"Australia will be violating its international obligations to detain people for the minimum necessary period, and honestly it's morally abhorrent." – Bassina Farbenblum, director of the migrant and refugee rights project, Faculty of Law, on Australia's new border protection policies, *The Age*

"[The eruption] would have to be at least 100 times bigger to have any effect on climate." – Steven Sherwood of the Climate Change Research Unit on Iceland's volcano, *The Sydney Morning Herald*

"The atmosphere in many of our overworked and crowded psychiatric inpatient units resembles badly run menageries." – Vaughan Carr, Professor of Psychiatry, *The Australian*

"If you make suicide more difficult, then people won't do it or they will choose a method that is less successful." – Matthew Large, senior lecturer in the School of Psychiatry, *The Sydney Morning Herald*

"They do less than Australian women but they compare favourably to men in some countries." – Lyn Craig, senior research fellow in the Social Policy Research Centre on Australian men's role in the home and with childcare, *The Age*

"The balloon was simply a vehicle to take two tonnes of instruments to the top of the atmosphere." – Associate Professor Ravi Sood from ADFA's Alice Springs base speaking about a NASA balloon, the size of the MCG, that was launched 40 kilometres into the atmosphere to gather data about the earth, *Northern Territory News*



Out of site

A bridge between industry and research ... Wharton's Michael Gibbons, ASB's Alec Cameron and Managing Editor Marie Kelly

Research from the Australian School of Business has been opened up to a potential global audience of almost six million people. As Amanda Woodard reports, the School has launched its online journal, as part of the Knowledge@Wharton network.

It was a glamorous night at the Sydney CBD campus of the Australian School of Business (ASB), with slick video displays and portable computers set up to get people hooked into the latest thinking from business researchers.

Fashion doyenne Carla Zampatti and BridgeClimb entrepreneur Paul Cave were among the heads of industry and business professionals who were at the launch of the online business journal. Called *Knowledge@Australian School of Business*, it presents easy-to-read, thought-provoking analysis of business news and trends and interprets academic research for a global business audience. The site has been developed in partnership with the prestigious Wharton School.

As people from business and academia mingled at the launch, the Dean of ASB, Professor Alec Cameron spoke of how he hoped the portal will continue to build a bridge between these worlds.

"One of the functions of business schools is to inform public debate on business practice and government policy. *Knowledge@Australian School of Business* will tap into our academic research so that business people can put it into practice," he said.

Keen to take advantage of this new publication, the Business Council of Australia was represented at the launch event by its President, Graham Bradley. He spoke of the importance of lifelong learning for business executives who need to be well informed on the big issues of the times, among

them, climate change, skills shortages and population ageing.

Articles in the launch edition analyse a range of contemporary issues, including the debate over winding back the Federal Government's stimulus initiatives. It also covers issues within employers' direct control – from ubiquitous smart phone use to badly behaved bosses.

The online journal – which is free and published every two weeks – is modeled on the award-winning *Knowledge@Wharton* that has more than 1.4 million subscribers worldwide in 189 countries. The actual audience is estimated at closer to six million people, with the rest tapping in through search engines and social networking sites.

Its outstanding success, Professor Michael Gibbons, Deputy Dean of the Wharton School says, "far exceeded any reasonable expectations" when it was launched 11 years ago. With editions now available in the US, Latin America, China, India, the Middle East and now Australia, *The Economist* magazine has called it "the envy of every other school".

Professor Gibbons, who attended the launch along with colleague, *Knowledge@Wharton*'s IT Director, Sanjay Modi, says: "At Wharton we are committed to leading the world in the creation and dissemination of business knowledge. This partnership with the Australian School of Business is particularly important to Wharton because of Australia's unique location and the perspective it can bring in terms of the Asia-Pacific region."

Marie Kelly, Managing Editor of *Knowledge@Australian School of Business* and Communications Director of the Australian School of Business says the portal will raise the global visibility of the School, its academics and research. "It will also help readers to access the knowledge behind the headlines and share it with friends and colleagues. It will enable them to comment on articles using Twitter, Facebook and OpenID," she says.

New articles will be published every fortnight, delivering fresh angles on business issues and featuring interviews with industry leaders and academics. Podcasts, videos and text-based articles are included, as well as conference overviews, book reviews and links to relevant content. The site also links to the wider *Knowledge@Wharton* network.

The network as a whole is continually evolving. Professor Gibbons told attendees at the Sydney launch of plans to develop further editions in German and French, along with an edition aimed at a younger audience – "trying to take our content and make it relevant to high-school students".

A bigger vision, he says, is to develop a platform for mobile phones, offering business knowledge for entrepreneurs in developing countries and having a social impact in poorer communities.

To become a subscriber, go to www.knowledge.asb.unsw.edu.au. •

Out of Africa

New light is being shed on the evolution of humans out of Africa. As Steve Offner and Bob Beale report, UNSW scientists are at the forefront of the developments.



Precise science ...
Dr Andy Herries with an
Australopithecine skull

Photo: Patrick Cummins

The world two million years ago just got more crowded.

First was the discovery of fossilised skeletons of a previously unknown species of ancient human in a cave site in South Africa by an international team of scientists – including UNSW’s Dr Andy Herries – that made headlines around the world.

The well-preserved skeletons found in the Cradle of Humankind National Park near Johannesburg were of a species of upright walking, small-brained hominin that could be “the best candidate yet” for the title of “missing link” between our ape-like ancestors and modern humans, the scientists claimed.

Then came a second announcement – yet another new species of ancient human, but this time classified as one of the earliest known members of our own genus (*Homo*). Identified and named by another UNSW scientist Dr Darren Curnoe from the Faculty of Science, the surprise finding was based on a fresh analysis of a series of partial skulls found decades ago in South Africa’s famous Sterkfontein and Swartkrans Caves, also near Johannesburg.

The two incredible discoveries place UNSW at the forefront of the booming field of paleoanthropology. It’s a science where Australia has an impressive pedigree: It was another Australian, anatomist and anthropologist Raymond Dart, who famously identified the first known extinct apeman the “Taung child” in 1924. Today Australian scientists are recognised as world leaders in geochronology – the science of dating the ages of rocks, fossils, and sediments – and their expertise is widely sought. Drs Herries and Curnoe are currently working at some of the most exciting digs in the world, in Africa, China and Europe and have worked together over the last eight years to try to refine the ages of the various South African fossils.

The discoveries add yet another layer of complexity to what is a hotly contested story of how humankind evolved in Africa two million years ago.

“The finds will be hugely debated, as these things always are, and different people will say



Photo: Wits University

different things,” says Herries, who works in the School of Medical Sciences.

“It’s about the question of when and how we go from being the small brained bi-pedal ape to being a large-brained hominid like *Homo erectus*.”

“One of the only ways of working it out is to find more complete fossils. That’s how we’ll find what everyone’s looking for – the species that evolved into *Homo erectus* and, eventually, into us.”

Missing link?

News of the discovery of remarkably well preserved skeletons of a new species of human ancestor sped quickly around the world.

The two partial skeletons of an adult female and child had been found in miners’ debris in the Cradle of Humankind World Heritage Site in 2008 but kept secret for two years by scientist Professor Lee Berger from Johannesburg’s University of the Witwatersrand and Professor Paul Dirks from James Cook University in Queensland.

The fossils had been stumbled upon by Berger and his nine-year-old son Matthew, after the site had been pinpointed using Google Earth.

The small brained species – named *Australopithecus sediba* – stood about one metre 50 centimetres tall, but had long legs and a pelvis that allowed it to walk upright, much like modern humans. And the creatures had powerful hands that could have made

and used stone tools. The discovery and identification were reported in the prestigious journal *Science*.

The name *sediba*, meaning “natural spring” in the Sesotho language, seemed appropriate for a species that might be the point from which the genus *Homo* arises, Berger said.

“I believe this is a good candidate for being the transitional species between *Australopithecus africanus* and either *Homo habilis*, or even a direct ancestor of *Homo erectus*,” he said.

The world was right to be excited, says Herries. “It’s an absolutely staggering find. There are not that many human fossils in the world. Most that do exist aren’t skeletons like this, but tiny fragments – teeth, or part of the skull.”

The richness of the site means more is likely to be uncovered. “The cave itself hasn’t really been excavated,” says Herries. “This stuff is literally lying around. When I was there Lee (Berger) just bent down and picked up a rock off the floor and it had a hominin bone in it.”

Brought into the team to help date the fossils, Herries used paleomagnetism – the study of the effects of changes in the Earth’s magnetic field on the alignment of minerals in cave deposits – to establish that the fossil-bearing rocks were between 1.78 and 1.95 million years old.

Then came the task of dating the remains themselves. Herries, along with radiometric

Breaking an ancient riddle

Another landmark UNSW study focusing on Africa has dramatically expanded understanding of human evolution and specifically the evolution of disease.

Led by Vanessa Hayes from the Children’s Cancer Institute Australia and the Faculty of Medicine, a team of international scientists sequenced the genomes of southern Africa’s indigenous Kalahari Bushmen and an ethnic Bantu – Nobel Peace Laureate Desmond Tutu – and found them to be among the world’s

most genetically diverse people.

More than 1.3 million new variants were added to databases of Human Genome Variation, which previously were Eurocentric.

“The hunter-gatherer peoples of southern Africa are believed to be the oldest known lineage of modern humans,” says Hayes. “On average, we found as many genetic differences between two Bushmen as between a European and an Asian.”

The discovery has important implications for medical research, providing potential markers for the origins, treatments and cures for many of the most complex diseases.

“We know that genetics play a role in pretty much all disease,” Hayes explains. “But what we really don’t know a lot about is the

complex diseases like cancer and Alzheimer’s. To understand them we need to understand the entire human DNA.”

Africa allows the “fine mapping” of disease, Hayes says. “To nail down a disease is much easier. Because Africans are genetically older, when we find a linkage to a disease, that genetic region is a quarter of the size of what it would be in Europeans.

“And this is my argument: why limit research to Europe? We can do research in Africa to understand disease in Europe, but we can’t do research on Europeans to understand disease globally.

“We have a prime tool in Africa that makes disease understandable for everybody. To harness it is not just ethical, it’s smart.”



Another new species of ancient human ...
Dr Darren Curnoe with a *Homo gautengensis* skull

Photo: Patrick Cummins

dating expert Robyn Pickering from the University of Melbourne, estimated the creatures fell into the 50 metre-deep cave around 1.95 million years ago.

“With the development of new techniques we are able to get precise dates for the South African cave sites and beginning to understand the relationships of the various species of early human to each other,” Herries says.

However, that understanding does not come easily. Evidence shows that around two million years ago human evolution had hit something akin to overdrive. Like today the *cause célèbre* was climate change.

“In Africa around this time there was enormous change in climate and a move toward more arid conditions,” Herries explains. “What we see up to that point is a linear evolutionary track – a couple of hominid species on the landscape. But then around the two-million-year mark we see numerous hominin species, each evolving to suit the climatic change in different ways.

“Suddenly we see the human evolutionary tree going from a couple of stems to this huge branching bush,” he says.

Many scientists have challenged Berger’s claim that *sediba* could be a direct human ancestor.

One such sceptic is the Faculty of Science’s Dr Curnoe. While agreeing the quality of the find is “rare and truly amazing” he says it has been “surrounded by hype and over-interpretation in terms of its significance”.

“*Sediba* is way too primitive to be the ancestor of the human genus *Homo*. It is the wrong species, in the wrong place and at the wrong time,” he says.

Herries doesn’t necessarily disagree. Fossils even older than *sediba* have been discovered in eastern Africa, yet classified as *homo*. He stresses his expertise is in dating fossils, not anatomy. Nonetheless, he is bemused by other scientists’ certainty of what the latest fossils are even though they have not studied them directly.

“Whether or not it is a missing link – and scientists do hate that term – it shows what a

transitional species might look like. Of course there are other candidates, but most of them are fragmentary fossils. Now that we have a complete skeleton, we may be able to shed light on fossils from other sites. We now have to see whether the older fossils look anything like this. That’s a big job for the future.”

Homo gautengensis

Like *Australopithecus sediba*, the second new species of ancient human – identified by Darren Curnoe – walked upright in southern Africa as long as two million years ago and, fully grown, stood just over a metre tall and weighed only about 50 kilograms.

But, unlike *sediba*, they had large brains, made stone tools and had probably mastered the use of fire: indeed, they were among the earliest known members of the human genus (*Homo*), says Curnoe.

Curnoe, an anthropologist in the School of Biological, Earth and Environmental Sciences, identified the new species – which he has named *Homo gautengensis* – among fossils found in 1976 in South Africa’s famous Sterkfontein Caves. The species takes its name from the local Gauteng Province, and is the local Sesotho name for ‘place of gold’.

The surprise finding was based on a partial skull – known by its museum catalogue number Stw 53 – along with two other partial skulls, several jaws, teeth and other bones found at various times at Sterkfontein and other nearby caves.

Although Stw 53 had been first scientifically reported back in 1977, it had lain largely ignored for many years until Curnoe undertook a restoration and fresh reconstruction of the fossil eight years ago, working with the renowned South African paleoanthropologist Phillip Tobias.

Initially the pair concluded that the skull was a member of another early human species, *Homo habilis*, thought to be a direct ancestor of humans. But after several more years of detailed scrutiny and comparison with the other fossils, he is now sure that it was sufficiently different to warrant its classification

as its own species and that it arose earlier than *Homo habilis* in east Africa. The finding will be reported in the journal *Homo*.

Dating of the fossils showed that *Homo gautengensis* may have existed until about 600,000 years ago. Its molar and pre-molar teeth were relatively large, suggesting that its diet included plant material that required plenty of chewing. Although small in relation to modern humans, its body size was substantially larger than a modern chimpanzee.

“The stone tools it used were fairly primitive, but those and its use of fire show us that it was using technology to obtain and perhaps prepare its food,” says Curnoe.

Its remains were found in the same caves as those of two distant relatives within the human family tree, *Australopithecus robustus* and *Australopithecus africanus*. Intriguingly, it seems that many of our earliest ancestors existed at the same time and occupied the same places as well.

“We can’t know, of course, but we can speculate that they may have encountered each other,” says Curnoe. If so, it’s impossible to say whether they were peaceful neighbours or clashed, but their differing anatomies suggest they led quite different lifestyles.

Homo gautengensis seems to have been a more specialised omnivore adapted to life on solid ground, whereas the more ape-like *Australopithecus africanus*, for example, had longer arms and other adaptations for climbing trees.

Like the other prehistoric southern African hominins, *Homo gautengensis* petered out and became extinct.

Although it thrived for a long time, Curnoe believes it is unlikely that either *Homo gautengensis*, or Berger’s *Australopithecus sediba*, were in our direct human line. They were indeed early hominins, but not ones that gave rise to our own species, *Homo sapiens*.

However, he says the broader significance of the find, like the discovery of *Sediba*, lies in what it adds to the surprising number of fossil discoveries of new human and human-like species announced in recent years – from ancient times to the more recently extinct tiny “Hobbit” of Indonesia – and the growing realisation from genetic studies that all modern humans are closely related evolving from a small founding stock that emerged out of Africa.

“These new species do help to fill out more of the remarkable human story and give another picture of the amazing diversity among our ancestors and close relatives,” he says.

“The more we dig and the more ancient DNA we sequence, the more it appears that our ancestors lived alongside many different kinds of humans and hominins over time. In many cases, they co-existed in various places. It was one vast experiment by nature in ‘humanness’, says Curnoe.

“Yet *Homo sapiens* is the only one to have persisted into modern times. When you look at it that way, despite our rich and colourful history, today we live alone.” •

The dingo ... likely to go the way of the Tasmanian tiger

New tricks find oldest dog

The dingo looms large in the Australian psyche but now it is finding its place on the world map. As Bob Beale reports, it's been found to be one of the oldest dog breeds.

It's no wonder that Alan Wilton is the patron of three dingo societies and as many dog clubs.

Dr Wilton, from the School of Biotechnology and Biomolecular Sciences, has been researching dogs for decades. Most recently, he was one of the authors on a paper on the origins of the domestic dog, published in the world's most prestigious journal, *Nature*.

Briefly, it found that dogs were most likely domesticated thousands of years ago from grey wolves in the Middle East – where cats and many of our livestock species originated and where agriculture first developed some 10,000 years ago.

It was the most comprehensive study of its kind, with researchers from around the world sampling genetic data from more than 200 wild grey wolves and more than 900 dogs of 85 breeds. New gene-testing technology allowed the team to analyse more than 48,000 genetic markers.

Although Wilton and his PhD student, Jeremy Shearman, contributed only seven of those samples, the media beat a path to their lab.

The interest was because those samples came from Australia's famous native dog, the dingo, which was proved to be the most distinct dog group, with the most similarity to wolves.

Separated from other dogs for some 5,000 years, the dingo may well be the world's oldest dog breed.

Wilton's longstanding interest in dingoes is paying other dividends, with his lab making steady progress on identifying 10,000 genetic markers to identify hybrids resulting from interbreeding with domestic dogs.

"There are few pure populations left and the dingo is likely to soon go the way of the thylacine, or Tasmanian tiger," says Wilton. "We've used DNA profiling for many years but the new high-tech sequencing methods are being applied to help try to save the dingo from extinction.

"We can do this by maintaining pure dingo populations in captivity and giving guidance to conservation authorities in managing wild dog populations in national parks."

The *Nature* study found that other ancient dog breeds include the chow-chow, basenji, akita, Chinese shar-pei, Siberian husky and Alaskan malamute. They could possibly have arisen from a separate domestication event to modern domestic dogs, which were mainly developed in the early 19th century in Europe.

It was that intense burst of dog breeding that left a legacy of inherited genetic disorders resulting from inbreeding. For Wilton, those disorders have provided rich veins of research with a growing tally of successes and financial support from breeders and benefactors.

In 2005, for example, after a decade of detective work, Wilton and his then PhD student Scott Melville, finally broke the grip of a fatal brain disease afflicting one of Australia's most popular dog breeds, the

border collie. They identified a key genetic mutation that enabled them to develop a test to help breeders screen out carriers of the disease and prevent breeding of affected dogs.

More recently, Shearman identified the gene involved in another border collie disease known as Trapped Neutrophil syndrome (TNS). This results in "failing puppy" syndrome, which had been a mystery, although breeders were painfully aware of its invariably fatal effects: up to 10 percent of all border collies – and possibly other collies – carry the genetic defect. Affected puppies fail to thrive due to infections resulting from weak immune systems.

Shearman has now genetically tested thousands of border collies from as far afield as Czechoslovakia, Canada, Japan and Brazil. Armed with the new test, Australian breeders have already prevented breeding of affected dogs and the disease can now be eradicated relatively quickly.

Next on the list are kelpies, with one generous donor giving \$50,000 to use the new sequencing technology to find a gene that causes ataxia, or uncoordinated movements, which occurs occasionally in the breed.

In addition to Wilton's patronage of dog and dingo clubs, he has also been awarded an Unsung Hero of Science Award (in 2004), from the Australian Science Communicators Association, and an Excellence in Contribution to Canine Research Award (in 2007), from the Master Dog Breeders Association. •

Fighting for justice

Advocating for change ... Kingsford Legal Centre director Anna Cody with law student Sharon Sangha

One of the longest-running community legal centres in Sydney has transformed lives for almost 30 years. Fran Strachan reports.

When a 90-year-old Indigenous man came to UNSW's Kingsford Legal Centre seeking advice about financial compensation for the years of institutionalisation and psychological damage he suffered as a child of the Stolen Generation, Anna Cody, the Centre's director, was profoundly affected.

Taken from his family as a six-month-old, his formative years were spent suffering abuse in an institution and then later working, unpaid, in horrific conditions on a Queensland farm.

For Cody, whose human rights and community legal education work has led her to El Salvador, Mexico and New York, it's the cases resulting from Australia's historical injustices to Aboriginal people which have impacted on her the most deeply.

"This was an intelligent, alert, funny man, who had the most immense dignity, combined with the deepest hurt," says Cody. "Fast approaching the end of his life, all he wanted was compensation for the wages he had never been paid as a teenage farmhand."

The elderly man, one of more than 3,000 people helped by the Centre each year, eventually secured some financial compensation after two years of assistance from the legal team.

It's this kind of dedicated, free and accessible legal aid that provides support to a section of the community who can't normally afford legal assistance.

"Our aim is to be open and accessible to the whole community," says Cody. "We want to educate our clients about their legal rights, so that ultimately, people can learn to use the law themselves."

Established in 1981 by the UNSW Law School, and based on the Kensington campus, the Centre offers free legal advice to anyone living, working or studying in the local area who can't afford private legal assistance. It is one of the longest-running free legal advice centres in Sydney.

"You can't do nothing about all the things that need to change in society, so you do something – I couldn't do anything *but* this."

Cases where the client is unable to self-advocate, is disabled, disadvantaged or Indigenous are given priority, as are cases that have the potential to reform an existing law. The Centre has recorded various High Court law reform victories in discrimination, family responsibility and employment law.

UNSW law students can also take part in a voluntary clinical teaching program at the Centre. They get hands-on experience analysing the operation of the legal system and developing skills dealing with clients while working on real cases.

Sharon Sangha, a law student with an undergraduate degree in commerce, had an

epiphany at the Centre.

"Before I came here I was passionate about insolvency and corporate law but now I've changed my focus. I always thought I'd be happy pushing paper around, but I'm really enjoying getting to know the people behind the cases," says Sangha.

"I have two clients who are currently in jail who filed assault charges against the police officers who arrested them. I've discovered there's very little recourse for people who challenge police decisions and that there's a big gap in the legal system for people who can't afford legal advice," says the 25-year-old.

Cody says it's not unusual for students to finish their clinical experience and decide to commit to some pro bono work after graduating, even if they don't continue on the community law path.

"Students have the opportunity to experience how the law impacts on the disadvantaged and how that affects their lives, which is really important," she says.

Cody has worked at the Kingsford Legal Centre for the past 15 years, but her enthusiasm and passion for community law remains undiminished.

"It would be easy to feel overwhelmed by all the things that need to change in society, but you can't do nothing, so you do something – I couldn't do anything *but* this," she says. •

The Kingsford Legal Centre can be contacted on 9385 9566.

A landmark legacy

The longstanding link between UNSW and the family of the late architect of the Sydney Opera House has just been strengthened. By Peter Trute.

In 1966 Jan Utzon, son of Sydney Opera House designer Jørn Utzon, was taken away from Sydney and the architecture course he was studying at UNSW. He would not return to his old university for 44 years.

When he did come back this year, it was to launch a new venture by UNSW's Faculty of Built Environment, the Utzon Lecture Series.

The Utzon name, synonymous with the peak of architectural endeavour, is an obvious title for a series of talks on the big issues in contemporary urban Australia. Its use is also a nod to a longstanding bond between UNSW and the Utzon family, forged in the battle that surrounded Jørn Utzon's controversial resignation from the Opera House project.

When Dean of Built Environment Professor Alec Tzannes spoke to Jan Utzon about using the Utzon name for the series and Jan coming to Australia to give the inaugural address, the Danish architect readily agreed.

"Jan has fond memories of being a student here," Professor Tzannes says. "He also knows that the faculty was right behind his father during his struggle to build the Opera House according to his vision."

Jan himself says he feels "a great affinity" with UNSW.

"I feel that the knowledge given to me by UNSW has been a great foundation for my professional life," he says. "My time there left me with a much better base for my studies, and subsequent role as an architect, than would have been the case if I had only studied architecture in Denmark."

That affinity with UNSW was evident in Jan's address at the lecture series launch, where a capacity crowd at UNSW's John Niland Scientia Building were given an intimate insight into the life and work of Jørn Utzon.

When last on the campus, Jan was sitting an exam as a second-year architecture student while his father worked at Bennelong Point to create the Opera House.

Jan would not complete his studies at UNSW. In that year of 1966, Jørn, after battling for years with a resistant NSW Government to build the Opera House as he had designed it, decided he could do no more. The famous architect quit the project and Australia, taking his family with him.

Utzon had many supporters however, among them academics of the then UNSW School of Architecture and School of Town Planning.

One of the leading supporters was Associate Professor Elias Duek-Cohen, who produced a booklet, *Utzon and the Sydney Opera House: Statement in the public interest*, which was

distributed as part of a wider campaign of letter writing, lectures and lobbying, to have Utzon reinstated to the project.

"I was among the people who were outraged by [the government's treatment of Utzon] and we formed a group called *Bring Utzon Back*," says Duek-Cohen, now retired and living in Sydney's eastern suburbs.

While the campaign did not succeed, at least in the short term, it was the start of a bond between the Utzons and UNSW.

When Jørn Utzon was re-engaged as design consultant to the refurbishment of the Opera House in 1999 – a rapprochement attributed

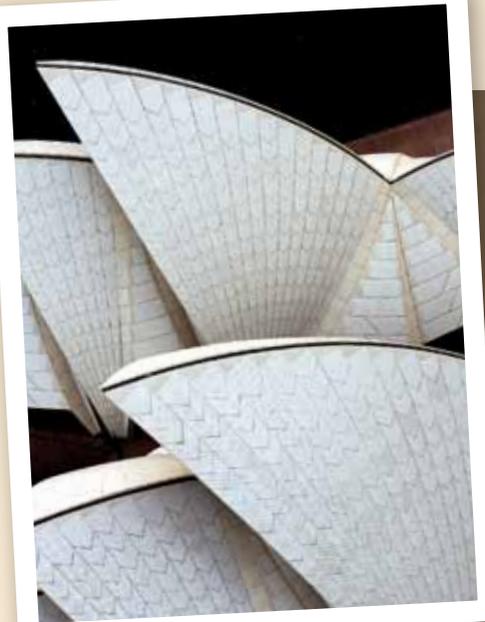
in part to Duek-Cohen's efforts – it was with UNSW's Professor Richard Johnson as his collaborator, along with Jan Utzon.

The collaboration resulted in the refurbished Western Foyers, which were opened in 2009, the year after Jørn Utzon's death. While he never returned to Sydney, Duek-Cohen said he was aware of the efforts made over many decades to have him return to the Opera House.

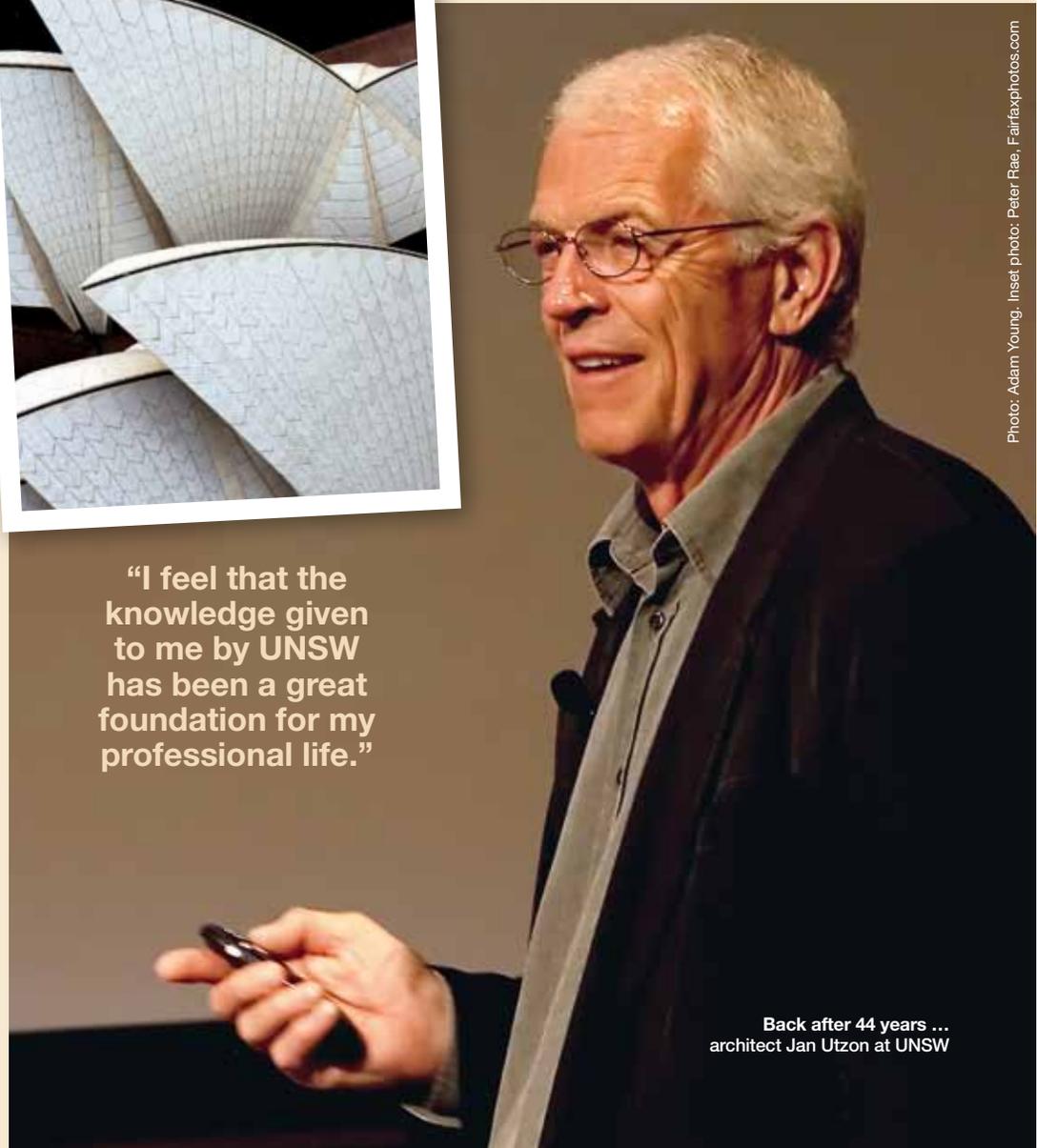
"Jan and Jørn were both appreciative of the efforts to bring Jørn back to the project," he says.

"When Jan came to Australia a few years ago to accept an honorary PhD for his father from Sydney University, we ran into each other at the ceremony and we both said: 'wrong university!'"

For more on the Utzon Lectures for 2010, go to the UNSW events calendar at www.unsw.edu.au/events.



"I feel that the knowledge given to me by UNSW has been a great foundation for my professional life."



Back after 44 years ... architect Jan Utzon at UNSW

Hospital reform fails health

The near agreement on hospital funding fails to deliver the major reforms our health system needs, according to Emeritus Professor John Dwyer.

Major reforms to Australia's health care system have been keenly anticipated since the election of the Rudd government. While numerous structural changes need to be made to restore equity and ensure long-term affordability, there are two threshold reforms that would allow us to judge the seriousness of the government's intent. Firstly, reforms must result in an end to the inefficiencies in a system where the states hold responsibility for delivering public hospital services but the Commonwealth pays the bills for much of our primary care (GP services) and our pharmaceutical benefits scheme. This structure necessitates nine separate departments of health for 22 million people with four billion dollars spent annually on duplications. This has not been achieved. In fact, the new system has delivered an even more cumbersome system for pooling and redistributing finances sure to delight bureaucrats and frustrate doctors and their patients. More money will flow from 1 July into our hospitals and that would be very welcome. However, most of us most of the time receive health care in the community. Surely real reform must target this reality.

Equally unsatisfactory is the Rudd plan for governance of the hospital system. The plan suggests that, as the major shareholder, the Commonwealth would have the authority to influence the improvement of the system's performance, including quality, safety and affordability. This should be the case. The original plan called for the establishment *by the states* of "Local Health and Hospital Networks" and their boards. A typical board would oversee the performance of one major and three community hospitals that would integrate their services. After the first year of the plan's implementation these "networks" would get their 60 per cent funding *directly from the Commonwealth*. The state government, however, would set the networks' total budget, and its board would report to the state health minister. In the latest agreement the direct



Photo: James Brickwood, Fairfaxphotos.com

involvement of the Commonwealth has been scrapped. Now networks would be funded by the states using the pooled money available.

Unsatisfactorily, these new networks would not be responsible for community or primary care in their area; they are "hospital" not "health and hospital" networks and as such contribute to the fragmentation of clinical services. They are, as proposed, far too small to achieve the critical mass necessary to be efficient. Mr Rudd's claim that his plan would end the cost shifting game, fragmentation and waste of resources is not defensible.

The reality is that we must change our hospital/sickness-centric system to one that emphasises the prevention of illness or its early detection and treatment and provides the resources for all Australians to benefit from our knowledge of how to avoid those all too common chronic illnesses.

The major wish for our stressed hospitals is to have fewer patients. Rudd acknowledges the 441,000 hospital admissions annually that could have been avoided with a timely community intervention (based on the Productivity Commission's 2007–2008 figures). The "win-win" for all of us is to have a healthier population that does not require so much hospitalisation. Currently, we have one of the highest rates of hospitalisation in the world. Neither the Australian people nor state

"Mr Rudd's claim that his plan would end the cost shifting game, fragmentation and waste of resources is not defensible."

governments should be asked to settle on a hospital finance package until the Australian Government's plans for primary care reform are provided in detail.

Minister Roxon has said on numerous occasions that the government is committed to "Integrated Primary Care" (IPC). It is not clear however if the model the government has in mind is the one most primary care specialists have advocated and which is increasingly utilised in other countries. The favoured model features "one-stop-shops" where doctors, nurses, allied health professionals and dentists work as teams to provide a full range of services to patients who have enrolled in these "Primary Healthcare Organisations". Prevention, early diagnosis, case management of chronic disease and care in the community of many patients currently sent to hospital are major features. Medicare funding of the team – not just the team's doctors – would be essential. To date, no such promise has been forthcoming. The model proposed by the

Taxing the body, helping the hip pocket

While prevention is better than cure, that approach has gone largely unheeded among Australians, writes Dr Michael Valenzuela, Research Fellow in the School of Psychiatry.



On the mend? ... Prime Minister Kevin Rudd and Federal Minister for Health and Ageing, Nicola Roxon visit a patient at the Royal North Shore Hospital

government – the “Super GP Clinic” – will not create a healthier population and less dependence on hospital services. Until we know the details of the Rudd primary care model, talk of changing hospital financing is premature and full of risk for the states.

Despite the obvious flaws, there are some excellent initiatives in the Rudd plan. More training places for health professionals, a new body to standardise best practice principles and health outcome measurements, decentralisation of much of the health bureaucracy, more community and clinician involvement in governance and 12,000 more aged care places would be welcomed. None of these plans, however, compensate for the deficiencies.

Could the Rudd plan be made acceptable? If there is a chance to review the total reform package, and if Rudd would declare 60/40 per cent funding as first step in a journey to 100 per cent Commonwealth funding of the health system with a timetable for the completion of the journey, then we could, while dissatisfied with the pace of reform, support the plan. Injudicious haste however could ruin our “last best chance” for real system-wide reform.*

John Dwyer is emeritus professor of medicine at UNSW and founding president of the Australian Healthcare Reform Alliance.

Amid all the rhetoric between the Prime Minister and state premiers and billions of dollars on offer, lies one despondent fact. None of this will actually improve our health. The debate so far has focused solely on how to better finance the way we manage ill health, injury and disease. What has been missing is a mission to actually improve health, which in practice means disease prevention. There is no greater medical outcome, to individuals, families, community and the budget bottom line, than actually preventing the onset of a chronic health condition. It's high time we designed a system that genuinely improves the health of individual Australians *and* helps put health finances on a responsible long-term footing.

It's logical to start with cardiovascular disease, which accounts for a staggering \$6 billion in health care costs every year. And rather than target just one risk factor like cigarettes, why not focus on *all* the main risk factors – hypertension, obesity, diabetes and high cholesterol as well as smoking. What is needed is an integrated preventative health campaign that appeals to that most sensitive part of the Australian anatomy: our hip pocket.

Let's link our cardiovascular risk profile to the personal taxation system. One-in-two adult Australians carry at least one of the five major cardiac risk factors. We are arguably the most overweight country on the planet and about 30 per cent of adults have unacceptably high blood pressure. Obesity makes us two-and-a-half times more likely to suffer a heart attack, and hypertension almost twice as likely to suffer a stroke. Incredibly, the effects of these risk factors in middle age reach out to haunt us later in life too. For example, those with high blood pressure in their 40s and 50s are two-and-a-half times more likely to develop dementia in their 60s and 70s. The next generation may therefore be the first in modern history to live a shorter life span than the generation before.

When it comes to changing health behaviour multiple strategies are required, but incentives seem to work. After all, we are rewarded for converting

our petrol engines to LPG and installing solar hot water panels on our roofs. These incentives align with our national interest and even the planet's welfare. Reversing the nation's cardiac risk profile deserves the same priority.

In an ideal world, good health would be its own reward. Yet in developed countries and Australia especially, this is simply not the case. Indeed, our situation suggests that drastic times demand drastic action. What is therefore proposed is that for every cardiac risk factor that a person can eliminate through non-medical changes to their lifestyle they receive (say) a \$1000 rebate. Because obesity, diabetes and high blood pressure all seem to share important biological mechanisms, at the early stages they are extremely responsive to simple lifestyle changes, including a healthier diet and more exercise. Similar schemes have been trialled on a smaller scale with some success in the US, and the UK government has also been considering an incentive system.

The economics of the argument are clear. Rebate expenditure will be more than offset by a large windfall in terms of lower rates of disease and health care costs. Of course a system for objectively recording evidence of risk factor elimination will be required. For example, confirmation through a blood test and sustained for 12 months. The local GP should become the main facilitator of the health strategy at the individual level. GPs would then simply inform the tax office electronically that their patient has met the scheme's criteria and is eligible for the rebate.

A preventative health action rebate would transform the healthcare landscape in Australia. It would elevate preventative medicine to the forefront of national health policy where it belongs, agree with our inclination to behavioural modification through reward rather than punishment, and would in a short space of time yield significant benefits to the economic and physical health of the nation. Now what is required is a shared vision for a healthier population from the departments of the Prime Minister, Health and Treasury. •

Reaching the heights ... Paralympic Gold Medallist Louise Sauvage on Mount Kosciuszko with Murray Bartram who has Mild Cerebral Palsy.

Pushing ahead

In Australia people with disability often live on the fringes of society. But as Dani Cooper reports, the work of UNSW researchers is ensuring their voices are heard.



Photo: Glen McCurtayne, Fairfaxphotos.com

People with intellectual disability are perhaps some of the most vulnerable in our society.

Apart from the special care they may require, they are also at a higher risk of having a psychiatric disorder.

These and other issues are central to the research of the University's inaugural Chair of Intellectual Disability Mental Health, Associate Professor Julian Trollor.

The position, unique in Australia, signals a commitment to raise the profile of this neglected area.

Trollor is helping establish a national network of researchers in disability that will lobby for more funding and lead to more informed policy making.

As Chair he is also improving collaborations across campus, teaming up with researchers in fields such as social policy and human rights.

At a research level, Trollor is launching a longitudinal study into ageing among people with an intellectual disability.

There are other areas that need special scrutiny such as mobility, respiratory and swallowing problems; and neurological and cognitive disorders such as higher rates of dementia.

"One of the main challenges is that people with intellectual disability often cannot communicate their health needs or indeed their symptoms in conventional ways. Thus there is a real problem with identification of

the medical or mental disorder."

At the other end of the age spectrum, Professor Rhoshel Lenroot is using MRI technology on children in the hunt for the triggers behind behavioural disorders such as autism and mental illnesses such as schizophrenia.

The Chair of Infant, Child and Adolescent Psychiatry, Professor Lenroot is doing scans on children with aggressive behaviours to see if their brain structure and development is different.



Photo: Grant Turner, Mediakoo

"People with intellectual disability often cannot communicate their needs in conventional ways."

Julian Trollor, researcher

One of her aims is to see if the imaging will throw up patterns of brain activity that might help in diagnosing certain conditions.

Children with behavioural problems are nothing new to Dr Terry Cumming in the School of Education.

She moved into academia after years of teaching students with emotional behavioural disorders. Now Cumming is at the forefront of training the next generation of teachers who work with these students.

Integral to her work is technology. She uses videotaped role-plays to teach students the right behaviour in different situations.

"This is a tool that helps remind them what it takes to follow instructions and to react appropriately," she says.

Cumming's success in this field has the potential to reduce the work of colleague Associate Professor Eileen Baldry, Associate Dean (Education) in the Faculty of Arts and Social Sciences.

Baldry is best known for her work on prisons – and statistics show children from disadvantaged backgrounds with behavioural issues at school have a much higher rate of contact throughout their lives with the law than their classmates.

For the past three years as part of an ARC Linkage grant, Baldry has been chronicling the lives of more than 2731 inmates with mental health and cognitive disabilities.

The groundbreaking study documents every contact each of these inmates has had with a

government agency such as police, juvenile justice, community services and housing.

The gargantuan task was required because as Baldry notes “we couldn’t wait 50 years to do a Seven-Up type study [and] interviewing people doesn’t provide the detailed information on lifelong agency contact held in administrative records”.

The findings are already being used across government departments with initial results showing points where intervention could improve health, well-being and social inclusion and reduce the likelihood of offending.

Baldry plans to take a similar approach with a project that will focus on Indigenous inmates. With colleagues Dr Leanne Dowse, from the School of Social Sciences and International Studies and Professor Trollor, they have applied for ARC funding to highlight the points of contact of Indigenous offenders with a variety of services, and to understand why some enter and then become stuck in the criminal justice system.

Helping harness interest across society, government and within academia was the ratification of the UN Convention on the Rights of People with Disabilities.

UNSW human rights lawyer Rosemary Kayess was an integral part of the Australian delegation to the UN committee that negotiated the text.

When Australia ratified in July 2008, Kayess, a Visiting Fellow in the Faculty of Law, admits to a feeling of triumph on a personal and professional level.

As a lawyer she describes the negotiations as “thrilling”, but as a person with a spinal cord injury, equally important was the integral involvement of people with disabilities in constructing the convention.

“It was important that there were strong professional advocates with disabilities that could be at the forefront of negotiations,” she says.

Kayess is now working with colleagues in the European Union looking at how it will respond to the challenges of implementing the treaty, with many of the lessons applicable to Australia.

For Kayess, the critical change will come when the commitment under the UN treaty for capacity building is fulfilled.

This strategy is one of the priorities of the Disability Studies and Research Centre (see below).

DSRC director Dr Kristy Muir says the Centre’s long-term vision for an inclusive society starts at the front door, with a commitment that each project has strong participation from people with disabilities.

Disability policy researcher Associate Professor Karen Fisher, at the Social Policy



“It was important that there were strong professional advocates with disabilities.”

Rosemary Kayess, researcher

Research Centre, is also a key supporter of participatory methodology, where research into disabilities is done either by or with people with disabilities.

It is an approach she would like to see adopted nationally and points to Europe where research in the field “won’t be done unless it is done by people with a disability”.

While providing advice to the Australian Government in its development of the National Disability Strategy and reviewing key issues such as direct individual funding for people with disabilities, Fisher also has an eye on China.

Working with UNSW colleague Dr Xiaoyuan

Shang and collaborators in China, they have three ARC grants to examine the experience of people with a disability throughout China.

Their work will help identify where policy changes might arise in the future and she hopes it will enshrine a more participatory model in the Asian superpower’s approach.

In the Faculty of the Built Environment’s City Futures Research Centre, Associate Professor Catherine Bridge is looking to provide the evidence-based research to support changes to help people with disabilities navigate the physical world.

She points to the access ramp as an example. Research shows the ramp does not reduce slip risk and instead a better approach is to slope the ground up to the height of the entrance level and then bridge the gap with a deck, creating an outdoor verandah look.

“With a ramp you look at it and think someone with a disability lives there, whereas with the bridge approach you just think it looks nice,” she says.

“Part of the problem is things like the Australian Standard that guide a lot of design are minimum standards that are based on consensus rather than research.”

A further problem is that much of the data used for design – such as body shape and reach distance – is drawn from the US, while our population is significantly different.

Access is also an issue for Professor Gerard Goggin, in the Journalism and Media Research Centre at UNSW. However his focus is on technology.

Goggin believes disability provides an exciting opportunity for business and designers to innovate. Yet high-profile companies such as Apple continue to disappoint.

When Apple released the iPhone, it did not support voice recognition technology. The touchpad made it difficult for people using pointers and visually impaired people found many applications hard to see.

It took two years for Apple to bring forward production of a disability-friendly phone.

“Digital technology is meant to be empowering, but it has also closed down opportunities,” he laments. •

Building an inclusive society

The Disability Studies and Research Centre (DSRC) was established in 2008 through UNSW strategic priorities funding.

However, according to director Dr Kristy Muir, as a concept it spans back to the early 1990s when university disability academics from across NSW formed a network to promote and support disability studies and research from a critical perspective.

Muir says the DSRC is unique because most other disability research centres in

the country focus on medical or rehabilitation issues.

The UNSW Centre, however, looks at disability from a social perspective and through the work of researchers such as Associate Professor Helen Meekosha, who applies critical and social theory to the field.

“Our aim is to have an inclusive society based on equality and the full participation of people with disabilities,” Muir says.

Muir says the breadth of research and review the Centre undertakes crosses

many disciplines and disabilities.

Collaborations across UNSW are common, in particular the Centre has a number of ongoing projects with the Social Policy Research Centre.

In all projects the Centre has “a very strong focus on ensuring we always work with people with disabilities as participants in our research”, says Muir.

The DSRC aims to become a training ground for people with disabilities to move into academia and research.

An (online) education

The revolution in online learning continues to sweep through the tertiary education sector. As Susi Hamilton reports, teachers will now find it easier to keep up thanks to an innovative new project.

The lights are on, the cameras rolling, and the crew are poised to get the perfect take.

It's not often that academics get the movie star treatment, but a new Australian Learning and Teaching Council (ALTC) funded program is changing that.

Developed by the team at COFA Online, a video-based *Learning to Teach Online* project aims to help teachers from any discipline understand online pedagogy and teaching practice so they too can start teaching online.

Available in June, 15 episodes in video and PDF format will explore successful online teaching strategies from a wide variety of disciplines. Tips, examples of best practice and a global community will be available at the stroke of a keyboard.

"This is a good learning experience for me," observes Dr Gay McDonald, Senior Lecturer in the School of Art History and Art Education at COFA, as she prepares to be interviewed about her experiences of teaching with new technology.

Dr McDonald uses online technology to allow her students to ask questions about how art museums work overseas – in this case, with a curator at the Museum of Contemporary Art in Denver.

"The biggest buzz I got was when the real-time discussion worked," says McDonald of the international meeting.

"The students took it very seriously. The real-world experience made it more valuable for them."

A bonus for teachers is that the project is free and open to everyone around the world. So far it features interviews with academics from around Australia, but the team soon hopes to include interviews from the UK, US and, with the help of COFA Online's Ian McArthur, China as well.

"That means that someone teaching maths in Townsville might have something that they can share with a French teacher in Paris," says project leader Simon McIntyre. "It's not a one-way communication.

"The resources that have been developed are aimed at connecting people, connecting institutions and sharing ideas. Nobody is working in isolation. It's a community."

While there has been some resistance amongst time-pressured academics to use new technologies, the popularity of online courses among students has been phenomenal, says Karin Watson, COFA Online's coordinator of online and special projects.

"The student evaluation has been excellent and we're hoping to replicate this with teachers," says Watson, of the nearly 1000 people enrolled in 25 undergraduate and postgraduate modules which are part of COFA's online art and design courses.

"Some students are reporting that using these online communities was the first time they felt they were able to contribute. It can be particularly useful for some students who have English as a second language or who may have a disability – such as being hearing impaired.

"This is not a replacement of face-to-face teaching," she says. "It just allows us to be more flexible."

In a signal of how important the government sees this form of teaching, the project has been given a \$219,000 grant over two years through the ALTC. The application was put together by McIntyre, drawing on years of collaborative research with Rick Bennett, Head of COFA Online.

While *Learning to Teaching Online* is not a course and so there is no formal qualification, the approach is already gaining attention. McIntyre and Watson are heading to the UK in July to present their research to an international online teaching conference.

"What has been amazing so far is the common experiences that are emerging from speaking to different people. It seems we all have the same type of challenges when teaching online, and some really amazingly positive experiences as well," says McIntyre. "This is very encouraging and means that despite differences in disciplines and applications of online learning, there is a way we can all learn from each other's experiences."

For more on the project and information about how to get involved, go to the COFA Online website.

<http://online.cofa.unsw.edu.au/learning-to-teach-online/news> •

Love of knowledge

There's much more to research than lab coats and libraries, says the new Dean of Graduate Research, Professor Laura Poole-Warren. By Peter Trute.

It's deadline day in the Graduate Research School (GRS) and in the foyer a steady stream of students is rushing to hand in theses.

Professor Poole-Warren, the Dean of Graduate Research, is congratulating candidates as they arrive. Many look shell-shocked from the effort but Poole-Warren is keen to make them appreciate what's happening – that they're making a contribution to the sum of human knowledge.

For Poole-Warren, the role of researchers is under-appreciated in the wider community. But this biomedical engineer of 20-plus years, former Associate Dean (Research) in the Faculty of Engineering and member of such groups as the Australasian Society for Biomaterials and Tissue Engineering, is not just talking about scientists in lab coats.

"Research is about expanding our knowledge and the knowledge base that's out there, coming up with original ways of looking at and understanding things," she says.

As GRS Dean, Poole-Warren is responsible for the direction and welfare of UNSW's 3,000 or so doctoral candidates and their supervisors. Having come to the role at the start of the year, she is familiarising herself with the research output of eight new faculties, in areas ranging from business to law to the arts.

It might seem daunting but Poole-Warren seems invigorated, switching conversation

enthusiastically between an update on her own work in biomaterials to describing her fascination with a student's thesis on ancient Chinese paper art.

"In science, research often means new knowledge or new technologies; in Arts and COFA the value is much more relating to understanding how society works and, in very different ways, how humans work," she says.

Research in one form or another is the focus of Poole-Warren's life, from her GRS role to her work as lead researcher on a \$500,000-plus ARC-funded project to develop a synthetic polymer which will allow transplanted insulin-producing cells to survive in the bodies of diabetes sufferers.

When she returns home each evening, it's to what is possibly Australia's most research-intensive household: biomedical engineer husband Peter Spencer is often busy on medical device patent issues, her eldest daughter is studying for an advanced science degree and her youngest daughter is preparing for the HSC. Family time is followed by a late-night session at the computer, following up on the latest reports from colleague, Dr Penny Martens and working out the next step for the lab.

Finding the time to fit research around teaching, administration and family commitments is a common challenge for academics. Poole-Warren is concerned about

the competing pressures of work-life balance for researchers and maintaining a strong national research effort.

"Research is something that doesn't fit into a set time because you tend to do all the things you have to do, then start on your research work," she says.

"In terms of work-life balance I think it's just as hard on men as women in the research community these days. Men and women have a very varied workload across teaching, administration and research and the key thing that we need to do for our academics is allow them the time to do research – I think it's unfair to load people up."

At the same time, she says, projects do have a habit of expanding to fill the time of the passionate researcher. Bushwalking trips with husband Peter – one of her hobbies outside the lab, along with ocean swimming and sailing – can morph into biomed brainstorming sessions.

"But we talk about it because we love it," she says.

"You can't switch off the creative aspects that are part of doing your own research. People don't think of engineers and scientists as creative but the creative aspects are enormous.

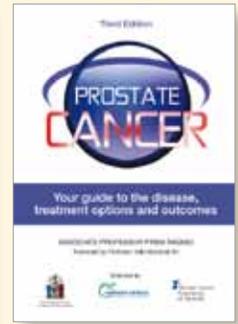
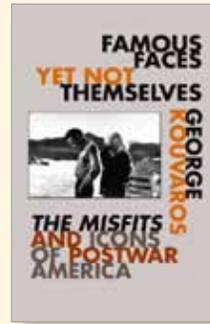
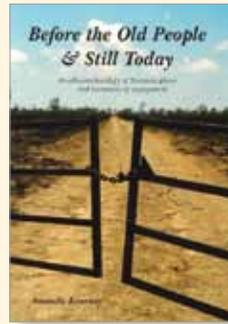
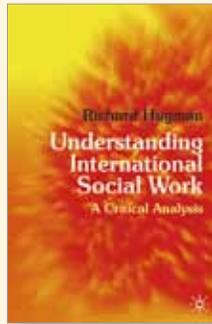
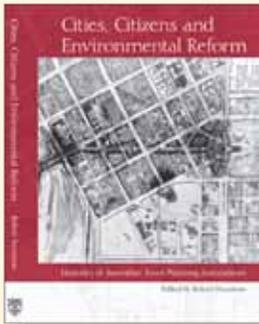
"Research in any field is the most exciting thing that you can do because you're finding out things that no-one else knows and you are driving the agenda." •

"Research in any field is the most exciting thing that you can do. You're finding out things that no-one else knows."

Professor Laura Poole-Warren ... leisure time often ends in biomed brainstorming sessions

New books by UNSW staff

A selection of titles that are hitting the bookshelves.



Author: Dr Anthony Billingsley from the School of Social Sciences and International Studies

Title: *Political Succession in the Arab World: Constitutions, Family Loyalties and Islam*
Political succession is a key issue in the contemporary Middle East. In this new study the author examines the process and shows how respect for those in authority and tribal codes of loyalty have been far more influential in maintaining regimes than security institutions and political repression.

Publisher: Routledge

Editor: Professor Robert Freestone from the Faculty of the Built Environment

Title: *Cities, Citizens and Environmental Reform: Histories of Australian town planning associations*

This tells a story of community involvement in the development of Australian capital city planning from the early 20th century – from the first wave of enthusiasm for modern town planning ideals before the Great War onto the more challenging social and political environment for the original town planning associations in the post-World War II era.

Publisher: Sydney University Press

Author: Professor Richard Hugman from the School of Social Sciences and International Studies

Title: *Understanding International Social Work: a Critical Analysis*

From its earliest days social work has been international. Globalisation has an ever-increasing impact on social issues and problems. This book is based on the premise that understanding international social work is about much more than just “knowing about other countries”. Instead, there is a need for a much greater breadth of vision and depth of understanding of social work internationally.

Publisher: Palgrave-Macmillan

Author: Dr Amanda Kearney from the School of Social Sciences and International Studies

Title: *Before the Old People and Still Today: An ethnoarchaeology of Yanyuwa places and narratives of engagement*

This book explores the emotional environs

and the worlds of pain, pleasure, contest and care that characterise Yanyuwa narratives of their homelands in northern Australia. Land and sea in the southwest Gulf of Carpentaria are country for the Yanyuwa. Documenting the ways that Yanyuwa, across generations, experience their homelands with great strength and endurance, Kearney highlights that engagement can be subtle and cognitive and often invisible on the ground.

Publisher: Australian Scholarly Publishing

Author: Associate Professor George Kouvaros from the School of English, Media and Performing Arts

Title: *Famous Faces Yet Not Themselves: The misfits and icons of postwar America*
This is a revealing examination of the impact of photography on the image of postwar Hollywood acting.

The 1961 film *The Misfits* saw the collaboration of director John Huston with playwright Arthur Miller and brought together on screen Clark Gable and Marilyn Monroe in what would be their final roles. Adding to the production’s lustre, the elite photo agency Magnum was hired to do the on-set photography. The photographs of this landmark film represent the end of an era of Hollywood stardom and the emergence of a new vision of the actor’s craft.

Co-editor: Associate Professor David McKnight from the Journalism and Media Research Centre (with Professor Robert Manne)

Title: *Goodbye to all that? On the failure of neo-liberalism and the urgency of change*

This is the first substantial book to explore what the global financial crisis means for Australia. It looks past “neoliberalism” and “economic rationalism” and asks what kind of social democracy we might hope for in the future. Are the heady days of deregulation and privatisation over? If so, where to from here? The book includes contributions from the Prime Minister; David McKnight and from another UNSW academic, Professor Michael Pusey.

Publisher: Black Inc. Books

Author: Conjoint Associate Professor Prem Rashid from the Port Macquarie Rural Clinical School

Title: *Prostate Cancer: Your guide to the disease, treatment options and outcomes* (third ed.)

This edition continues to represent the culmination of researched reference information, clinical trials to date and the opinions of professionals who treat prostate cancer. Most importantly, it also reveals the stories of 15 men who have experienced this disease and faced the issues with regard to treatment options and outcomes.

Publisher: Uronorth Group

Suggestions for new books to include in the next issue of *Uniken* should be sent to uniken@unsw.edu.au.

Diary

18 May – COFA Talks – Experimental Aesthetics

20 May – Faculty of Arts and Social Sciences’ So, What? Lecture – Eileen Pittaway, Centre for Refugee Research, UNSW. RSVP to 9385 8512 or so.what@unsw.edu.au

25 May – COFA Talks – Drawing: Developing a Language

28 May – Launch of the Lowy Cancer Research Centre

16 June – Utzon Lecture Series: Urban Consolidation. RSVP to 9385 4800

28 June – 1 July – *ConnectED 2010 International Conference on Design Education*, hosted by Faculties of Engineering, Built Environment and the College of Fine Arts. To book, please call 9385 0778

4 July – 9 July – Australasian Association of Philosophy Conference at UNSW. To register, please call 9385 2571

12 July – 15 July – Colloquium of Superannuation Researchers at UNSW. To register, please call 9385 3096

For further information about events at UNSW, go to www.unsw.edu.au/events.



Hollywood success ... Philip To with the award-winning animation

5:00 minutes with ... Philip To

Animator and COFA Graduate. By Susi Hamilton

Like most kids, Philip To enjoyed animation – he just took it a bit further. He’s turned that enthusiasm into a very successful career in the bright lights of Hollywood.

The 26-year-old, who graduated from UNSW’s COFA just over six years ago, has recently won an Annie Award – the animation industry’s highest accolade.

He took out the Individual Achievement category for Best Character Animation in a Television Production for his work on *Monsters vs. Aliens: Mutant Pumpkins from Outer Space* – DreamWorks Animation.

Although a spectacular achievement, it was not To’s first major coup. He was also part of the team that worked on *The Golden Compass* which picked up the Oscar in 2007 for Best Visual Effects.

“The Bachelor of Digital Media Degree at COFA was a great starting point,” says the California-based animator, who adds he has done further training and plenty of after-hours work to hone his craft.

“I’ve always had a lot of drive to succeed and my goal was to work on feature animated films, the same kind which inspired me when I was growing up. So getting to this point was years in the making it seems.”

To was back in Sydney for the first time in two years recently, when he and his sister Vivienne – who is also a COFA graduate

working in the industry – took time to speak to undergraduate students.

What is your earliest memory?

When I was a toddler and I had blocks that my dad gave me that he had sawn off while fixing furniture. I would make buildings and my mum would take photographs of them. My uncle threw the bricks away because he thought they were rubbish. I was devastated.

What’s your most treasured possession?

Right now I’m into photography. I take my camera everywhere. It gives me a chance to have another creative endeavour outside of work. It gets me away from the computer, outdoors and I view the world in a different way.

What’s one thing people might not know about you?

When I was a teenager I wanted to be a kung fu master. I would spend every day after school and my holidays practising. I gave it up at 18 because I had to choose between that and animation – but I would like to get into it again. Martial arts and animation both really appeal to me because there’s always more to learn.

What’s your favourite music?

I listen to a lot of music to animate. It’s

usually heavy metal – as long as it’s melodic. It blends into the background and keeps me focused.

My last meal would be ...

I’m really into meat pies at the moment, because I haven’t had one in such a long time! I’ve been craving them for two years.

A book that changed my life ...

As I work in such a visual field, I prefer seeing films and reading graphic novels [where the narrative is conveyed using art]. I loved reading *Tintin* when I was growing up – that influenced my story and character sensibility. They are timeless tales.

What has inspired you the most?

The Japanese animated films produced by *Studio Ghibli*, particularly my favourite *Porco Rosso*. I still love them! What is great about Japanese animation is that some films are geared to kids, others to adults, others are horror. Animation is for everyone – it can be used in many ways! In the West, it is seen as being for family films only – but as a film-goer I would like to see more done with it. •

The next movie Philip To worked on with DreamWorks, *Megamind*, opens later this year.



Name: Dr Abhijit Kallapur

Position: Research Associate

Faculty: School of Engineering and Information Technology, UNSW@ADFA

Research: Our research deals with developing techniques for the navigation and control of unmanned aerial vehicles (UAVs). The UAVs we deal with are small model aircraft which we program to be either partially or completely autonomous. Ultimately, they could be used for coastline and traffic surveillance, and search and rescue operations. Small aircraft are particularly useful in these situations because of their low cost and manoeuvrability.

For our purposes, the aerial platform is mounted with small wireless cameras that send crucial information about the area being surveyed. This live information is transmitted back to the UAV control station on the ground. In order to navigate and control small UAVs, we need to know their position and orientation in three-dimensional space. This information is provided either directly or indirectly by basic sensors mounted on the aircraft. Due to restrictions on weight these small aerial platforms cannot carry redundant sensors, so our research focuses on developing robust navigation techniques in the event of loss of sensor information. Our most recent method counteracts this by using mathematical equations to compensate for any loss of sensor information.

Inspiration: I am motivated to work in this field because this technology can be useful in search and rescue operations and it is nice to know that one day the work we do may help save lives. And of course, working with model aircraft is great fun! •

Abhijit is working with Professor Ian Petersen and spoke with Susi Hamilton.