

Adelaidean

NEWS FROM THE UNIVERSITY OF ADELAIDE

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Two giant reasons for students to volunteer

Story on page 12

Give the gift of knowledge

One of the greatest gifts anyone can give our students is a scholarship.

Scholarships are vital in supporting our students, giving them the best possible chance of gaining a quality educational experience.

Ask any student who has received a scholarship what benefits they get from it, and they'll tend to say the same things: studying at university can be a financial burden; my scholarship helps to take the financial pressure off; it means I don't need to get a job to support me while I study; it means I can focus on my education.

Scholarships change lives. They can change them in big ways – such as through major scholarships like the Rhodes, Fulbright, Menzies and Monash schemes, which lead to unique study opportunities – or they can change them in other ways, such as paying enough to cover tuition or important study costs.

Many scholarship winners go on to become leaders of the community, industry, politics and academia. Such students are talented and their talent deserves to be recognised and fostered, helping them to reach their fullest potential.

At the University of Adelaide, I'm pleased to say that we have a huge number of scholarship recipients at both undergraduate and postgraduate level.

Our undergraduate scholarships for commencing students alone are valued at \$1 million, and this year we gave scholarships to 150 new undergraduate students. This is a major commitment to providing the best educational opportunities for students who deserve them.

There are scholarships for commencing and continuing students, for those in financial need,

for students with disabilities, for those from rural, regional or remote areas, for Aboriginal and Torres Strait Islander students, for Honours students, postgraduate coursework and research students, for international students, and even some scholarships for those who study over their holidays.

It sounds like a lot – and it is – but we need more. Our students need more.

For every student who receives a scholarship, many dozens miss out. That means for many students, their educational opportunities and experiences are limited simply due to financial pressures. We should not accept that as the norm.

By offering an array of scholarships, the University of Adelaide provides hope to students who have the academic talent and ability but who might consider a university education to be beyond their grasp. There could be many reasons for this, such as concerns about the costs associated with study, or of relocating to the city from a country area.

Scholarships help us to provide higher education to those who deserve it, regardless of their socio-economic status, location or other disadvantage.

Industry and community support is critical in helping us to maintain and grow our scholarships. This year, SA Water doubled its scholarships, providing 24 students with financial support as well as offering some of them paid work experience. Such support is extremely important in providing educational opportunities as well as direct links between our students and industry.

Families such as the Hawker and Cowan families have been an outstanding presence in the provision of scholarships and bursaries to students. Members of the community have also been vital in supporting the annual Vice-Chancellor's Scholarships, which give exceptional students the opportunity to attend the University of Adelaide.

To all of those who already provide our students with scholarships each year, I thank you. To those who are considering support for scholarships, we welcome your generosity. The gift of knowledge is the best gift of all.



JAMES A. McWha
Vice-Chancellor and President

Adelaidean

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Best for customer service

Top quality customer service to our students has been recognised in the latest “mystery shopping” benchmarking exercise undertaken by the University of Adelaide’s Student Centre.

As part of the University’s strategy to maintain and improve high standards of student service delivery, the Student Centre’s enquiry telephone service participates in regular benchmarking surveys.

In Customer Service Benchmarking Australia’s (CSBA) latest Quarterly Report, the University of Adelaide set the benchmark for overall performance for the universities surveyed.

The CSBA survey judges the quality of customer service by measuring and assessing the time taken to respond to a call, greeting skills, manner, enquiry resolution, communication skills and complaint handling skills.

Student Centre Manager Sue Ciccarello said it was pleasing to see University of Adelaide in the overall top position, and many points above the sector average, in the latest survey which included 14 universities across Australia.

“We like to monitor our performance so that we get an external, objective assessment of how the enquiry service is shaping up against its peers and against similar operations in other sectors so that we can take any action necessary,” Ms Ciccarello said.

The quarterly report also surveys other sectors including financial institutions, councils, utilities, airlines and telecommunication companies, although comparisons between sectors are only on sector average.

“Interestingly, the university sector compares well against these other sectors across all criteria,” said Ms Ciccarello.

The University of Adelaide’s Student Centre has a team of dedicated staff to help current and future students.

“We’re here to provide help and advice to students or their families on a range of issues – from choosing what to study and how to apply, to information about scholarships or accommodation, and many other issues that affect students,” Ms Ciccarello said.

“Our promise is that if we don’t know the answer to your query, we will find the person who does.”

For many students, deciding what they want to study and whether they are making the right choices can be a difficult and stressful decision.

“Students can easily feel overwhelmed with options,” she said. “It’s also common for students to worry that they will be locking themselves into a future study and career path for the rest of their lives. This simply isn’t true.”

In addition to the team at the Student Centre, there are many staff who provide support services to students.

Student support includes help with accommodation, making the transition from school, study help, counselling, financial support, careers advice and specific support networks for international students, elite athletes and students with disability.

Story by David Ellis

Above: Student Centre Manager Sue Ciccarello (centre) with members of the Student Centre team

Photo by Michael Mullan

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South Australian OF THE YEAR AWARDS 2009

University of Adelaide staff and graduates have received five of the prestigious 2009 South Australian of the Year Awards, including the two top awards.



ASSOCIATE PROFESSOR
BILL GRIGGS AM ASM

Associate Professor Bill Griggs AM ASM has been announced as the 2009 recipient of the prestigious **South Australian of the Year Award**.

Dr Griggs is an Associate Professor in the University of Adelaide's Discipline of Anaesthesia and Intensive Care (School of Medicine) and is Director of Trauma Services at the Royal Adelaide Hospital (RAH).

Dr Griggs graduated in medicine from the University of Adelaide in 1981. He joined the consultant staff of the RAH and assumed his current position as the Director of Trauma Services in 1995.

He has a strong interest in safety and injury prevention and is the founder of the Roads2Survival community road safety program. He is the State Controller (Health and Medical) for disasters within SA Health.

He is perhaps best known for his work in disasters, having been deployed to manage evacuations and victim care for the Bali bombings, the 2004 Boxing Day tsunami and most recently, has headed up the medical team in the Samoan disaster.

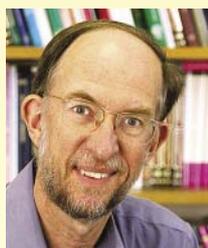
Dr Griggs has completed hundreds of aeromedical retrievals within the State and has been instrumental in the establishment of MedSTAR – South Australia's new retrieval service – where he is the Director of Retrieval Coordination.

Dr Griggs was recently recognised with an Ambulance Service Medal in the 2009 Queen's Birthday Honours and was made a Member of the Order of Australia in 2003 for services to medicine, particularly in trauma, emergency and intensive care management and education.

The author of more than 60 publications, he has lectured widely and is an Associate Professor at both the University of Adelaide and James Cook University.

He has recently completed a Masters of Business Administration (MBA) at the University of Adelaide.

The South Australian of the Year Awards are run by Advantage SA and supported by the Government of South Australia.



PROFESSOR
ROBERT NORMAN

The University of Adelaide's Professor Robert Norman has been named the winner in both the **Health** and **Science** categories of the 2009 South Australian of the Year Awards.

Professor Norman, a world-renowned reproductive health expert, is a Professor in Obstetrics and Gynaecology at the University of Adelaide and is the Director of the University's Robinson Institute.

He specialises in clinical management of infertility and reproductive endocrinology conditions such as Polycystic Ovary Syndrome (PCOS), lack of ovulation, hormonally caused menstrual period problems and menopause. Professor Norman is one of the world's experts on the management of infertility using innovative IVF techniques.

Earlier this year, he was named the 2009 South Australian Science Excellence Awards Scientist of the Year, and in 2007 he was named one of 10 of the Best Minds in Australian Research.

The Robinson Institute, which consists of more than 200 researchers and many students, specialises in reproductive health and regenerative medicine.

The citations for Professor Norman's South Australian of the Year Health and Science Awards said he was recognised for his "outstanding contribution to reproductive health and regenerative medicine".

"Professor Norman promotes internationally competitive research in reproduction that is equal to any research currently being conducted around the world."

Advantage SA (formerly known as SA Great) CEO Nikki Seymour-Smith said Professor Norman's work was at the forefront of international reproductive research.

"Professor Norman is a truly deserving recipient [of these awards]. He is an international expert in various areas relating to reproductive health and infertility.

"It is extremely pleasing that such world-class research is being undertaken right here in South Australia," she said.



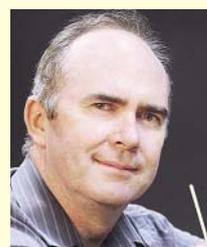
JULIAN O'SHEA

University of Adelaide engineering graduate Julian O'Shea has been named **Young South Australian of the Year**.

Julian is a young leader within the engineering profession, the Australian Defence Force and the wider community as an active volunteer.

He completed a Bachelor of Engineering (Information Technology & Telecommunications) with Honours at the University of Adelaide in 2005, followed by a Masters in Engineering Science from the Australian Defence Force Academy.

His professional expertise has seen him represent Australia at international conferences, serve as an officer in the Royal Australian Navy, and he currently represents young engineers on the national board of the College of Information, Telecommunications, and Electronics Engineering.



TIMOTHY SEXTON

University of Adelaide music graduate Timothy Sexton has won the **Arts** category of the South Australian of the Year Awards.

Sexton, who graduated from the University of Adelaide in the 1980s with a Bachelor of Music, Honours in Composition and also a Graduate Diploma in Education, is one of South Australia's most prominent musicians.

He has worked as a freelance composer, conductor, arranger, singer, writer and adjudicator over the past 30 years.

Currently the Artistic Director/Conductor of the Adelaide Art Orchestra, he recently composed the original film score for the feature movie *The Marriage of Figaro* and has conducted many musicals and operas.

He has composed more than 200 works.

\$54 million impact on research

University of Adelaide researchers have been awarded more than \$54 million for new research that aims to make an impact on many aspects of our lives.

Recent funding announcements from the Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) will support 92 new research projects starting next year, plus research fellowships and career development.

University of Adelaide researchers secured \$12.6 million in ARC funding and \$41.7 million in NHMRC funding.

The University's Vice-Chancellor and President, Professor James McWha, said: "The University of Adelaide continues to demonstrate strengths in fundamental and applied research that will benefit industry, government and society for many years to come.

"This is another excellent result for our researchers across a broad range of disciplines and is indicative of the depth of world-class research being conducted at our University."

The University received 78% of the NHMRC funding awarded in the state and ranked third in the nation for 2010 Project Grants awarded.

Deputy Vice-Chancellor (Research) Professor Mike Brooks said this result "has reinforced the University of Adelaide's reputation as one of the most research-intensive institutions in the country".

National Health and Medical Research Council (NHMRC)

The total of \$41.7 million in NHMRC funding includes \$35.8 million to launch 54 new research projects that have the potential to save, prolong and significantly improve the quality of lives for all Australians.

The projects include research into early childhood development, nutrition, cancer and other diseases, men's health, obesity, indigenous health, reproduction and heart disease.

Some key projects include:

- \$4.1 million to Professor Maria Makrides (Women's and Children's Health Research Institute (WCHRI) and University of Adelaide (Professor of Nutrition)) to investigate food allergies among infants and also test the role of iodine on children's development;
- \$1.76 million to Professor Gary Wittert (Medicine) to investigate how changes in sex hormones, together with inflammation and environmental factors, can contribute to heart disease in men;
- \$1 million to Professor James Paton (Molecular and Biomedical Sciences) to identify factors contributing to pneumococcal, a major cause of bacterial pneumonia, sepsis and meningitis especially in children and the elderly;
- \$1 million to Professor Ian Chapman (Medicine) to research the impact of testosterone tablets and a nutritional supplement to help reduce hospital admissions in under-nourished, older people;

Six researchers have won Career Development Awards totalling \$2.3 million, while NHMRC Research Fellowships totalling \$3.6 million have been awarded to another six researchers who are carrying out significant work in their field.

Australian Research Council (ARC)

More than \$12.6 million will fund 38 new projects at the University of Adelaide spanning the fields of environment and ecology, agriculture, finance and economics, health, physics, engineering, computer science, genetics, history, geography and psychology.

The funding – for fundamental research, as well as projects that include industry and government – will also attract more than \$4.2 million in additional support from external partners.

Among the successful projects are:

- \$844,000 to Professor Graeme Hugo (Geographical & Environmental Studies, Social Sciences) to study circular migration in Asia, the Pacific and Australia, which is fundamental to the nation's economy, society and security;
- \$622,997 to Professor Robert Gibson (Agriculture, Food and Wine) to investigate the production of biodiesel fuel from meat industry by-products;
- \$160,000 to Associate Professor Peng Bi (Public Health, Population Health and Clinical Practice) to study how the elderly have adapted to and coped with extreme heatwaves in South Australia;
- \$360,000 to Dr Wolfgang Haak (Australian Centre for Ancient DNA, Environment Institute) to understand genetic changes in human populations caused by past epidemics;

For more information about research at the University of Adelaide, visit: www.adelaide.edu.au/research

Professor Maria Makrides, pictured here with a baby at the Women's and Children's Hospital, has won a total of \$4.1 million for two separate research projects

Photo by Ben Osborne



World-class science precinct has added value

A proposed new University of Adelaide building will bring great scientific advances, top teaching and research facilities for students and staff, and an estimated \$230 million and 2000 jobs into the state economy.

The University is proposing to develop a new \$77 million teaching and research building on the site currently occupied by Union Hall.

It will incorporate the new Institute for Photonics and Advanced Sensing (IPAS) with specialised laboratories that will be the best in the world for developing a new generation of optical fibres (*see story on next page*), and additional research and teaching facilities.

The development will provide 8200 metres over seven levels of much-needed research and teaching space.

The project will bring an estimated \$230 million, 770 direct and 1300 indirect jobs into the state economy over the 2.5 year construction period.

"This development will provide a world-class research and teaching facility that will allow our researchers to develop revolutionary technologies. These will bring tremendous benefits to health, the environment, food and wine production and defence," Professor McWha said.

"It will give students the benefit of first-rate teaching facilities and the opportunity to work with great researchers, who will be attracted from around the world to this facility.

"It will also help us meet our urgent need to accommodate rapidly expanding student numbers – approximately 1000 extra students each year – and our growing research activity."

Professor McWha said the jobs created and economic stimulus for the state was a "significant community benefit at a time when unemployment is predicted to keep rising at least in the short term".

"We need to make tough choices to best use our limited space and the funding we get. We are funded for research and teaching and that's where we must place our priorities.

"We acknowledge the loss of Union Hall has significance for some members of the community. However, we need to ask the question: do we want to keep an ageing facility that is not being used any more as a full theatre; that makes a poor lecture theatre; and that would require a substantial investment to refurbish and meet occupational health and safety requirements?

"Or, do we want to look forward and build something that will bring far greater benefits for students and staff, for advances in science and medicine, and for the South Australian community as a whole?"

Union Hall was built in 1958 as a multipurpose facility, deliberately not called a theatre, funded from a fundraising campaign. The biggest contribution to the campaign came from the University; the balance from a public appeal with a contribution

from the Adelaide University Union – then an association of staff and students.

Union Hall has not been used by the Adelaide Festival since 2000, there has been limited use in the last decade by Adelaide Fringe, and the University's Theatre Guild stopped its regular use 15 years ago.

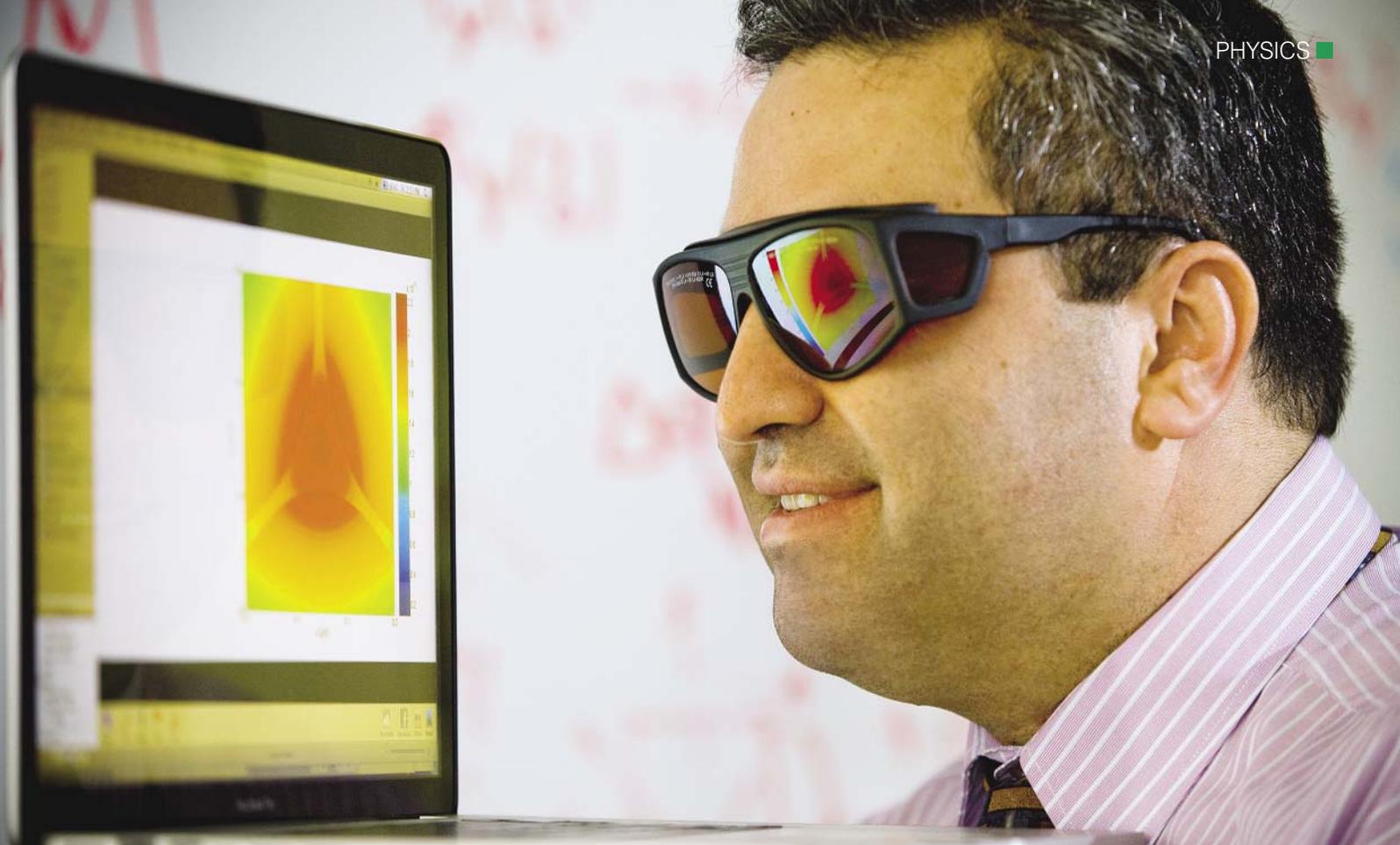
The University is investing in a \$1.5 million update of Scott Theatre, which will be in use in time for the Adelaide Festival in 2010.

During the 2010 Adelaide Festival, there will be 28 performances on the University of Adelaide campus in both Scott Theatre (20 performances – State Theatre Company) and Elder Hall (eight performances) – more performances than any other venue provider outside the Adelaide Festival Centre.

Story by Robyn Mills

Below: An artist's impression of the proposed new \$77 million science building, which would be joined up with the existing Molecular Life Sciences Building
Image courtesy of Hassell





Light of learning shines at new institute

Scientists at the University of Adelaide have made a breakthrough that could change the world's thinking on what light is capable of.

The researchers in the University's new Institute for Photonics & Advanced Sensing (IPAS) have discovered that light within optical fibres can be squeezed into much tighter spaces than was previously believed possible.

Optical fibres usually act like pipes for light, with the light bouncing around inside the pipe. As you shrink down the size of the fibre, the light becomes more and more confined too, until you reach the ultimate limit – the point beyond which light cannot be squeezed any smaller.

This ultimate point occurs when the strand of glass is just a few hundred nanometres in diameter, about one thousandth of the size of a human hair. If you go smaller than this, light begins to spread out again.

The Adelaide researchers have discovered they can now push beyond that limit by at least a factor of two.

They can do this due to new breakthroughs in the theoretical understanding of how light behaves at the nanoscale, and thanks to the use of a new generation of nanoscale optical fibres being developed at the Institute.

This discovery is expected to lead to more efficient tools for optical data

processing in telecommunications networks and optical computing, as well as new light sources.

IPAS Research Fellow Dr Shahraam Afshar made this discovery ahead of last month's launch of the new Institute.

The Federal Government, State Government, DSTO, Defence SA and the University of Adelaide have committed a combined total of more than \$38 million to support the establishment of the Institute.

IPAS is a world leader in the science and application of light, developing unique lasers, optical fibres and sensors to measure various aspects of the world around us. A strong focus of the new Institute is collaboration with other fields of research to find solutions to a range of problems.

"By being able to use our optical fibres as sensors – rather than just using them as pipes to transmit light – we can develop tools that, for example, could easily detect the presence of a flu virus at an airport; could help IVF specialists to determine which egg should be chosen for fertilisation; could gauge the safety of drinking water; or could alert maintenance crews to corrosion occurring in the structure of an aircraft," said Professor Tanya Monro,

ARC Federation Fellow at the University of Adelaide and Director of IPAS.

Professor Monro said Dr Afshar's discovery was "a fundamental breakthrough in the science of light".

Another IPAS researcher, Dr Yinlan Ruan, has also recently created what is thought to be the world's smallest hole inside an optical fibre – just 25 nanometres in diameter.

"These breakthroughs feed directly into our applied work to develop nanoscale sensors, and they are perfect examples of the culture of research excellence that exists among our team members," Professor Monro said.

"They will enable us to study the applications of light at much smaller scales than we've ever thought possible. It will help us to better understand and probe our world in ever smaller dimensions."

Story by David Ellis

Above: Dr Shahraam Afshar, Research Fellow with the Institute for Photonics & Advanced Sensing, theorised that light could be squeezed into much tighter spaces than was previously believed possible. Those theories have now been proven.

Photo by Jennie Groom

\$2.1 million boost to Library

Every great research institution needs a great research library, and the collections at the University of Adelaide have just been given a significant boost.



Earlier this year, Vice-Chancellor and President Professor James McWha approved \$2.1 million in ongoing funding for the University Library to dramatically expand its collections.

This funding boost was the result of a review commissioned by the University in 2007 to assess the Library's buying power and to benchmark it against the other universities in the Group of Eight.

The review found that a funding boost for the Library was needed in order for it to continue its excellent service of the University's research-intensive mission.

University Librarian Ray Choate said that once the extra funding was announced, feedback about what should go on the Library's shopping list was sought from Schools and Faculties.

"This funding increase has allowed us to critically examine areas of need across the entire University," Mr Choate said.

"We've been pleased to grant almost all

the requests received for new resources.

"The new collections focus on areas that are growing strongly, as well as on areas of emerging research interest, including multi-disciplinary research.

"Some of our new resources are items that have been keenly sought after for a long while, and we're gratified that we're now able to offer them."

New additions to the collections encompass electronic resources (including 22,000 new e-book titles), datasets, music scores and multimedia items, as well as new books and journals.

"The funding has been spot on in terms of being able to meet demand and we were even able to add some extra acquisitions after the first round of requests," Mr Choate said.

"While the volatility of the currency markets earlier in the year gave us cause for thought, the current strong position of the Australian dollar was an unanticipated

extra boost to our buying power, given that so many resources are purchased from overseas.

"The new breadth and depth of our collections comes at a perfect time, as the University of Adelaide continues its very strong performance in attracting research grant funding," Mr Choate said.

The University Library encompasses the iconic Barr Smith Library, as well as the Elder Music Library, the Sir John Salmond Law Library, and the libraries of the Roseworthy and Waite campuses.

The Library collections will become even more widely accessible to members of the University of Adelaide community as it increases the mass of electronic journals, books and databases.

To find out more about recent acquisitions, visit: www.adelaide.edu.au/library/news/resources

Story by Karah Hogarth
Photo by Randy Larcombe

Art & Heritage Collections



The University of Adelaide is proud of its connections to the Braggs – Sir William Henry and his son Sir William Lawrence. Sir William Bragg was the Elder Professor of Mathematics and Physics at the University from 1886-1908 and his son studied here and graduated in 1908 with First Class Honours in Mathematics.

They went on to jointly win a Nobel Prize in 1915 for their work on solving the structure of crystalline materials using x-ray diffraction.

A display of the Bragg material from our Physics Museum is on

display in the newly established Royal Institution of Australia – for opening hours visit: www.riaus.org.au

At the Royal Institution you will also be able to see a film on the Braggs, *Driven to Diffraction*, in which material from the University's Physics Museum and the Scientific Apparatus Collection was used to recreate the laboratory used by the Braggs for their Nobel Prize-winning work.

Mirna Heruc,
Manager, Art & Heritage Collections



This microscope was made by C Collins of London and purchased by Professor William Henry Bragg while there on study leave in 1898.

The microscope was purchased from Bragg's family in Cambridge and donated to the University of Adelaide by physics graduate Dr John Jenkin in May 1997.

Photo by Mick Bradley

Iraqi student has real-world perspective

As a child living in Baghdad, Khadhraa Glen would watch a convoy of United Nations lorries deliver food to Saddam Hussein's Royal Palace – supplies that were meant for the Iraqi people under the Oil-for-Food program but redirected elsewhere.



"I was supposed to be a recipient of that food so it really made an impact on me," the now 23-year-old student said.

"It was at that point that I thought, 'One day, I will be in a position to help my people, or those less fortunate' – and that day has finally arrived."

This month, Khadhraa will complete her Bachelor of International Studies degree from the University of Adelaide and has already secured a highly sought after position working in the international field.

No doubt her impressive resume helped tip the scales in her favour.

Her three-year degree was interspersed with a long spell in Iraq, working as an Arabic/English bilingual and cultural adviser for the Coalition Forces in Basra.

The internship was certainly an extraordinary one, where she literally put her life on the line to extend her international knowledge and to better understand a war that has divided the world.

As one of only a handful of women among a 20,000-strong military occupation, it was a tough environment for a young Muslim woman, but she soon earned the respect of the soldiers.

"It wasn't at all what I expected," Khadhraa said. "I had visions of living

in a war zone with shots being fired all around me, but it was different. Although it was certainly dangerous and we were shelled constantly, the US forces were also implementing a lot of development projects for the Iraqi civilians."

Khadhraa's main task was to assist the military in liaising with the Iraqi people, providing language, religious and cultural training.

"Through my logistics and liaison job I helped avoid a lot of potential conflicts because I was able to act as a mediator between the soldiers and civilians. It was a very satisfying experience and I also learned a lot about the military in that time."

Returning to Adelaide and her studies required an enormous adjustment, but informed with a broader view of the world, and the Middle East in particular, she has completed her International Studies degree with a unique perspective.

"The internship has certainly helped my job prospects, but I think the degree in itself equips students with the knowledge to work anywhere in the world.

"It is certainly a course of study I would recommend to Year 12 students who want a transportable career and a job that is valued both in Australia and overseas. The

options are also very broad – you can work in intelligence, politics, on development projects and in private enterprise as well as government."

Khadhraa's parents immigrated to Adelaide in 2000, and after topping Croydon High School in 2005 with a TER of 93, she was accepted into the University of Adelaide.

In her first year at university she worked as a volunteer with the former Democrats Senator Natasha Stott-Despoja, (now a visiting lecturer in Politics at Adelaide), whom she regards as one of her role models.

"She encouraged me to pursue my dreams and career goals and face up to the obstacles along the way," Khadhraa said.

In 2007 Khadhraa also became the first South Australian Muslim to be awarded a gold medal for the Duke of Edinburgh Award and in the same year was a semi-finalist for the SA Young Achiever Award.

Story by Candy Gibson

Above: International Studies student Khadhraa Glen with a Military Police officer at the Coalition forces base in Basra, Iraq

Around Australia on fish'n'chips

Former oil driller Paul Carter has completed an historic 18,300km journey around Australia riding the country's only registered biodiesel bike, built by the University of Adelaide.

Riding at a maximum speed of 100kph, Mr Carter took 11 weeks to finish the epic trek, using 630 litres of "fish and chip oil" to fuel the bike.

The 40-year-old author and former offshore oil rigger described the adventure as "an amazing experience" and an opportunity to spread "the good oil" about the benefits of biodiesel over hydrocarbons.

"The bike performed incredibly well," he said. "It got us around Australia, leaving only a very small environmental footprint."

Along the way, Mr Carter spoke to dozens of farmers about the advantages of biodiesel as an alternative fuel source.

The journey also provided him with the opportunity to "give something back to the environment" after working in the oil industry for 20 years.

The award-winning biodiesel bike nicknamed "Black Betty" was built by the University's Mechanical Engineering students in 2007 under the supervision of Dr Colin Kestell.

Prior to this trip the biodiesel bike had already won acclaim for generating minimal greenhouse gas emissions in completing a 3000km trek between Darwin and Adelaide in seven days.

Mr Carter plans to write a book – *The Good Oil* – about his road trip, accompanied by a DVD filmed by his support crew along the way.

The book will also contain details about his next challenge – attempting to break the world land speed record on a high-performance biodiesel motorbike, currently being built by the University's School of Mechanical Engineering.

"We're planning on doing speed trials in March next year at Lake Gairdner in the north of South Australia, an enormous salt lake which has been the site for several land speed record attempts," he said.

The world record will be attempted in 2011.

For more details about Mr Carter's trip visit: www.thegoodoil.tv

Below: Paul Carter with "Black Betty"
Photo by Dan Stevenson



Student water project wins national prize

A University of Adelaide student project aimed at solving urban water supply problems in Australia has won a national engineering award.

Engineers Australia has honoured Fiona Paton, John Baulis, Ben Staniford and Lisa Lloyd for an engineering project aimed at helping governments to overcome urban water shortages in a sustainable manner.

The four completed a case study of Adelaide's Southern water supply system (which supplies about half of Adelaide's water needs) for their 2008 Honours project in the School of Civil, Environmental and Mining Engineering.

Fiona (now a PhD student), John and Ben presented the group's findings at the Society for Sustainability and Environmental Engineering national conference in Melbourne last month.

"One of the major challenges of this century is to identify ways to reliably supply water to towns and cities under the increasing pressures of population growth, urbanisation and climate change," Fiona said.

"We undertook a multi-faceted approach to this problem that incorporated economic, environmental and technical aspects of water supply.

"For our case study, we examined River Murray supply, reservoir supply, desalinated water and household rainwater tanks, and evaluated different combinations of these supply types in terms of their cost, greenhouse gas emissions and water security risk.

"Ideally, to meet the demand of the Southern system in the long term, as well as keep the costs and greenhouse gas emissions to a minimum, a combination of all sources would be best.

"Reservoir and River Murray water are cheaper and produce fewer greenhouse gas emissions than desalinated water and rainwater. However, due to the uncertainty over River Murray supply and with reservoir yield projected to decrease due to the effects of climate change, then alternative sources must be considered," Fiona said.

"Desalinated water is preferable in terms of cost, while rainwater outperforms desalinated water when it comes to greenhouse gas emissions.

"Hopefully, the techniques developed in this research project will help water managers in Australia make better informed and more sustainable decisions when planning for long-term water supplies," Fiona said.

The students were supervised by Professor Holger Maier and Professor Graeme Dandy from the School of Civil, Environmental and Mining Engineering.

Story by Candy Gibson

Above: winning students (from left) Fiona Paton, Ben Staniford, John Baulis and Lisa Lloyd
Photo by Ross Reid



Extinct moa rewrites New Zealand's history

DNA recovered from fossilised bones of the moa, a giant extinct bird, has revealed a new geological history of New Zealand.

A team of scientists led by the University of Adelaide has reconstructed a history of marine barriers, mountain building and glacial cycles in New Zealand over millions of years, using the first complete genetic history of the moa.

After almost being totally submerged around 25 million years ago, the current South and North Islands were separated by a large sea until around 1.5 million years ago, researchers said.

Project leader Professor Alan Cooper, from the University of Adelaide's Australian Centre for Ancient DNA (ACAD), said New Zealand was recognised as one of the world's "great evolutionary laboratories" due to the absence of land mammals and the radiation of giant flightless birds such as the moa.

"Yet this research is rewriting the geological history of New Zealand and shows how little we really know about it," Professor Cooper said.

The team of Australian and New Zealand researchers sequenced DNA from hundreds of birds collected from caves and swamps, including all nine species of moa.

The birds, which weighed up to 250kg, were the dominant animals in New Zealand's pre-human environment but were quickly exterminated after the arrival of the Maori around 1280 AD.

"We found that the remarkable evolutionary dispersion of the nine moa species took place in only seven million years and seems to have occurred as the Southern Alps rapidly rose up and created lots of new habitats," Professor Cooper said.

The evidence also suggested that many of New Zealand's iconic species – including the kiwi, tuatara and kauri – evolved solely on the South Island.

"This raises the question of what was happening on the North Island during this time," Professor Cooper said.

Lead author Dr Mike Bunce from Murdoch University extracted traces of DNA from moa

bones, mummies and coprolites, which the researchers were able to use to create the first detailed evolutionary time frame for moa.

Professor Peter Kamp from Waikato University led the geological mapping that revealed the extent of the seaway separating the two islands, as well as the uplift history of the Southern Alps.

"When the seaway was first bridged by land around 1.5 million years ago, it is likely that a major interchange of species took place as also occurred between North and South America across the Panama isthmus around three million years ago," Professor Kamp said.

Team member Dr Trevor Worthy from the University of NSW said the study was "an excellent example of how museum specimens can contribute to cutting-edge science".

The study has been published in the *Proceedings of the National Academy of Sciences*.

Story by Candy Gibson

Above: A reconstructed image of the giant extinct moa

Two giant reasons for students to volunteer

The Adelaide Zoo's two new giant pandas, Funi and Wang Wang, are finally here – and University of Adelaide students will help show them to the world.

In an innovative partnership between Zoos SA and the University of Adelaide, around 300 students will become trained volunteer tour guides at the Adelaide Zoo.

The first batch of 135 will more than double the number of volunteer tour guides the Zoo currently has, and will help cater for the expected influx of visitors to the Zoo when Funi and Wang Wang are unveiled to the public in mid-December.

By mid-2010, some 300 University of Adelaide students are expected to take part in the Zoo's tour guide training program.

Under the scheme, which was developed by the University's Development and Alumni office, the students taking part are predominantly either from China or studying Science. These students will undergo a short, intensive training course that will enable them to be tour guides not only for the pandas, but, like all existing volunteer tour guides, for the entire Zoo.

Science student Katherine Adriaanse and Law and Commerce student Andrew Wong are two of the first 135 students who will become tour guides.

"I'm really excited," Katherine said. "I've studied zoology at uni and I can't wait to show the pandas and all the other animals at the zoo to people."

"I'm proud of my Chinese heritage and I think it's great that the pandas are coming to Adelaide," said Andrew, who can speak fluent Mandarin and Cantonese.

"I'm looking forward to using my skills to help out, particularly with the visits of Chinese politicians and officials."

Zoos SA President Heather Caddick said the students' participation was a further demonstration of the close ties between Zoos SA and the University of Adelaide.

"The impending public display of Funi and Wang Wang has already generated unprecedented interest in the Zoo and its activities, and we are grateful for the hundred-plus University of Adelaide students who have volunteered their time to help with what promises to be a busy time for us," Mrs Caddick said.

"The Zoo and the University of Adelaide are two of the state's oldest and proudest public institutions. Many of our paid staff either studied at the University of Adelaide or continue research through its Faculty of Sciences.

"This partnership is another example of how we are working together to increase our understanding of the animal kingdom at what is a particularly exciting time for us."

University of Adelaide Vice-Chancellor and President Professor James McWha thanked the participating students for their commitment and enthusiasm.

"We were overwhelmed by the response when we put the call out to the groups of students – we had more than 300 students indicate an expression of interest," Professor McWha said.

"I congratulate the 135 students who will soon become tour guides. They have just finished their exams after a long year of classes and assignments, but will be spending their holidays volunteering their time to help others.

"The student experience at the University of Adelaide is much more than attending lectures and tutorials: our students have the opportunity to further themselves outside the classroom in a variety of ways."

Development and Alumni Director Mrs Robyn Brown said the scheme promised to give participating students a memorable and unique experience.

"Current students are considered alumni of the University of Adelaide, and it's been an increasing focus of the Development and Alumni office to further engage with them through programs such as this partnership with Zoos SA," she said.

"This is an experience that all the students taking part will never forget and that they won't be able to get anywhere else – it's exciting for them and the University."

Story by Ben Osborne



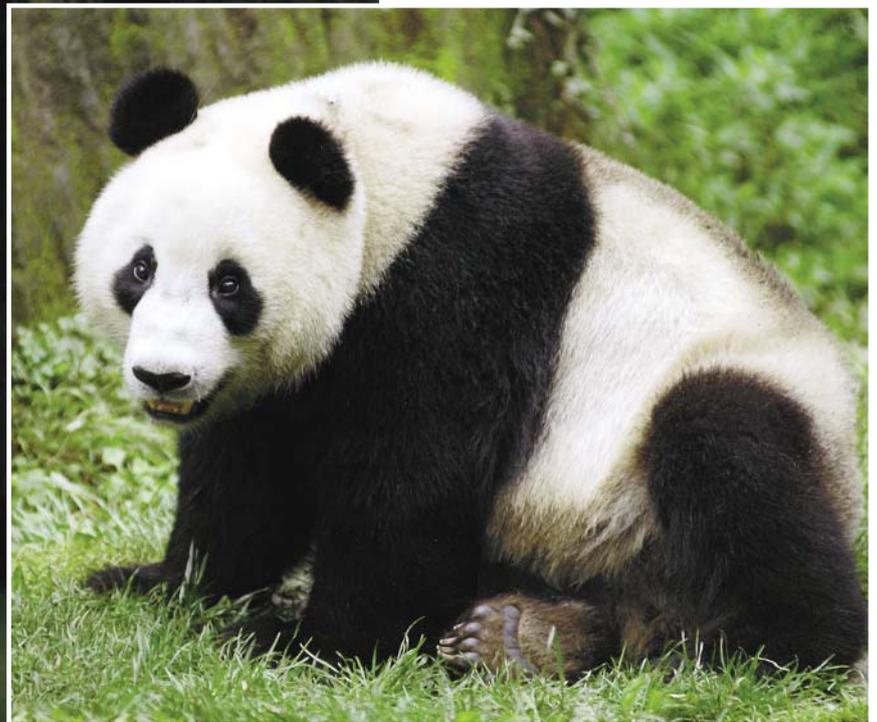


Above: Student volunteers at the Zoo (from left) Katherine Adriaanse, Kui Si Quinn Ng, Wei Ping Aaron Tan and Andrew Wong

Photo by Ben Osborne

Left and inset: giant pandas Funi and Wang Wang will be unveiled to the public at Adelaide Zoo this month

Photos courtesy of Zoos SA



Algae biofuel project leads world

Australian scientists are achieving the world's best production rates of oil from algae grown in open saline ponds, taking them a step closer to creating commercial quantities of clean biofuel for the future.

A joint \$3.3 million project led by Murdoch University and involving the University of Adelaide now leads world algae biofuel research after more than 12 months of consistent results at both universities.

It was previously believed impossible to grow large quantities of algae for biofuel in open ponds consistently and without contamination, but the research team has proven it can be done.

The project has received \$1.89 million funding from the Australian Government as part of the Asia-Pacific Partnership on Clean Development and Climate.

"This is the only biofuel project in Australia working simultaneously on all steps in the process of microalgal biofuels production, from microalgae culture, harvesting of the algae and extraction of oil suitable for biofuels production," said Project Leader Professor Michael Borowitzka from Murdoch University.

Due to the project's success, construction of a multi-million dollar pilot plant to test the whole process on a larger scale will now begin in Karratha in the

north-west of Western Australia in January, and is expected to be operational by July.

"This is another potential growth industry and jobs generator for Western Australia and South Australia aside from mining – using our natural abundance of sunlight and year-round good climate," Professor Borowitzka said.

"We have achieved production rates of 50 tonnes per hectare per year, over half of which is converted to oil. These high production rates are expected to increase at the new pilot plant due to the even better climatic conditions in Karratha."

The first stage is costing \$1.5 million and further funding is being sought for future stages, estimated to cost between \$5-10 million.

The cost of producing biofuel from algae has already dropped from \$12 a kilo to below \$4 in the past year, but the aim is to get it down to less than \$1 a kilo.

Dr David Lewis from the University of Adelaide's School of Chemical Engineering said a key aspect of the project was to show that commercial levels of algae could be grown without competing for resources with food crops.

"The algae will grow on non-arable – even arid – land without any need for freshwater in cultivation," Dr Lewis said.

"By contrast, crops such as canola need a lot of freshwater and good-quality farming land. Growing algae at an industrial scale also takes up significantly less land than that required by canola crops to produce the same amount of biofuel."

In addition to producing clean fuel, Professor Borowitzka said that during the growth of the algae, 60 tonnes of CO₂ were fixed per hectare of algae each year.

One of the project's international partners, major algae producer Parry Nutraceuticals in India, has also achieved high rates of carbon fixation.

South China University of Technology is the project's other international partner.

Story by Taynia Maxted and David Ellis

Below (from left): Dr David Lewis and Dr Peter Ashman (School of Chemical Engineering) with a sample of the algae being cultivated in Adelaide

Photo by David Ellis





Pedestrians at risk, warn safety experts

Australian car manufacturers need to pay more attention to designing cars that protect pedestrians as well as the occupants, according to researchers from the University of Adelaide.

Engineers from the University's Centre for Automotive Safety Research (CASR) say the highest selling vehicles in Australia lag behind their European and Japanese counterparts when it comes to pedestrian safety.

"While some of our locally produced cars are achieving a five-star rating for occupant safety, they still have a long way to go when it comes to protecting pedestrians in the event of a collision," said CASR researcher Giulio Ponte.

"Most of our vehicles have a poor capacity to absorb impact from a human body, resulting in significant leg and head injuries even at impact speeds as low as 40km/h," Mr Ponte said.

In the past 20 years, 6149 pedestrians have been killed on Australian roads, representing 16.5 per cent of all road fatalities in this period.

Getting hit by a car at 40 km/h is equivalent to falling from the roof of a double storey house onto the front of a car, researchers said.

"Pedestrians in Europe and Japan are more likely to suffer fewer injuries on impact because the vehicles in these countries are

designed with some emphasis on pedestrian protection," Mr Ponte said.

Mr Ponte and CASR colleague Andrew van den Berg would like to see the Federal Government adopt the Global Technical Regulation (GTR) for Pedestrian Safety.

"There is currently no requirement for Australian car manufacturers to achieve a minimum level of protection for pedestrians when designing new vehicles," Mr van den Berg said.

"However, so far this year 158 pedestrians have died on Australian roads because of a collision with a motor vehicle. The adoption of a GTR would be an excellent starting point to reduce the risk of injuries to pedestrians."

According to results from the Australasian New Car Assessment Program, the Subaru Impreza has achieved the maximum four stars in Australia for pedestrian safety as well as achieving a five-star occupant protection rating.

The majority of the other top 20 selling cars with a five-star occupant protection rating only have a one or two-star rating for pedestrian protection.

Story by Candy Gibson



Lack of experience key factor in youth crashes

A University of Adelaide study has found that young drivers are twice as likely to have an accident during their first few months of driving on a provisional licence than after a year of driving experience.

Craig Kloeden from the University's Centre for Automotive Safety Research (CASR) said the high crash rates showed that many newly licensed young drivers were still too inexperienced to handle a vehicle safely.

"The study indicates that it is many hundreds of hours before young drivers become competent in a vehicle," Mr Kloeden said.

The current requirement for learners to gain their provisional licence in South Australia is 50 hours of driving, but this will soon be increased to 75.

"Given that young drivers are 15 times more likely to have an accident once they move from their learners to a provisional licence, there is a strong case for extending the length of the learner phase even more," Mr Kloeden said.

In the study of 50,000 young drivers aged 16-19 over a five-year period, CASR also found that two types of crashes were commonplace among drivers in the first 12 months of gaining their P-plate: veering off the road and hitting fixed objects; and failing to correctly negotiate a right-hand turn across traffic.

"By the end of their first year of a provisional licence, these types of accidents were far less common," Mr Kloeden said. "It demonstrates that time spent behind the wheel is a very important determinant of crash risk."

While traffic offences related to driving skill – such as failing to indicate and give way – also decreased in the first year of a provisional licence, speed, alcohol and seat belt offences all increased among the young drivers.

"Giving our youth extended, supervised experience on the road and instilling in them safe driving behaviours early on are key factors to reducing the youth road toll," Mr Kloeden said.

"Raising the provisional licence age to 18 and having a maximum speed limit of 80 km/h during the first year of driving would also greatly reduce the number of youth crashes."

Story by Candy Gibson

Adelaide students win PM's scholarships

Four University of Adelaide students have been awarded Federal Government scholarships valued up to \$63,000 to study and work in Asia under a new program initiated by Prime Minister Kevin Rudd.



The students have won a prestigious Prime Minister's Australia Asia Endeavour Award – the Asian equivalent of a Rhodes Scholarship – which was presented by the Prime Minister in Canberra last month.

The Awards provide educational and living expenses for 6-12 months of study in 2010 at a university of their choice in Asia, followed by internships of up to a year. They are valued at up to \$63,500 for postgraduates and up to \$41,500 for undergraduates.

Jade Cooper (studying Bachelor of Laws/Bachelor of International Studies/ Diploma of Languages (Japanese)) will attend Osaka University, Japan, taking a combination of Law, Foreign Affairs and Japanese language courses.

Michelle Lee (PhD student in Orthopaedics) will go to the Chinese University of Hong Kong, to research traditional Chinese medicine and the effects on bone cancer.

Matthew Rodda (PhD student in Bioscience) is off to the Institute of Urban Environment within the Chinese Academy of Sciences, to undertake research on the physiology of rice plants.

Kathleen Wang (Bachelor of Psychology (Honours)) will visit the University of Hong Kong, to study intercultural psychology and holistic health care.

All plan to take internships with Asian companies or organisations relevant to their degrees once they have completed their study components.

The University of Adelaide's Vice-Chancellor and President, Professor James McWha, said the Awards provided a unique opportunity for local students.

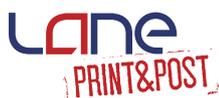
"The Australia Endeavour Awards will help our students undertake research that is not only relevant to their degree, but they will gain international work experience and build a professional network in Asia.

"It's a wonderful achievement and an opportunity to establish lifelong career collaborations. These awards also further cement the University's strong links with Asia," Professor McWha said.

Story by Candy Gibson

Above: Hong Kong, which will be the destination for two of the four University of Adelaide students thanks to the Prime Minister's Australia Asia Endeavour Awards

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New *Lumen* out this month

Millions of people from around the world will have the opportunity to benefit from cutting-edge research into stem cells being conducted by University of Adelaide researchers.

In the latest issue of *Lumen*, the University's alumni magazine, Associate Professor Simon Koblar from the Centre for Stem Cell Research explains how stem cells from teeth may help repair stroke-damaged brains.

Preliminary data show promising results, with adult dental pulp stem cells demonstrating a natural ability to produce neurones for brain repair. This research is advancing at an incredible pace and will be the focus of a Research Tuesdays presentation by Assoc. Prof. Simon Koblar on 8 December. More details can be found at www.adelaide.edu.au/researchtuesdays/

The Summer 2010 edition of *Lumen* also demonstrates the impact of our graduates' work around the world in many other fields.

Dr Mara Warwick is using her engineering knowledge to help rebuild provinces in China shattered by the 2008 earthquake; robotics expert Zoz Brooks is drawing on his computer science degree to close the gap between humans and machines; and anthropology graduate Christie Lam is using her education to transform the lives of a small Nepalese village community.

Another graduate profiled in this issue is University Medallist and Classical Studies researcher Dr Meaghan McEvoy, who is forging an impressive academic career around the imperial politics of the late Roman Empire. Meaghan has recently won a postdoctoral fellowship at

the University of Oxford, where she also completed her PhD.

Dr Graham Lyons from the Waite Campus proves that a small amount of money and a little knowledge can make a life-changing difference to poorer communities. The agricultural researcher has recently returned from the Solomon Islands where he implemented a \$140,000 program to encourage villagers to grow sweet potatoes and other coloured vegetables. This simple food source is helping to boost immunity and curb major nutritional deficiencies in the Pacific Island region.

Also featured in the Summer edition are details of a new national program to recruit the country's best university graduates to teach in Australia's most disadvantaged schools. One of our own alumni, Matthew White, has been headhunted to help drive this initiative.

Lumen is published twice-yearly and distributed to 60,000 members of the University's alumni community. If you would like to be put on the mailing list to receive the magazine, please email: alumni@adelaide.edu.au

***Lumen* can also be read online at:**
www.adelaide.edu.au/lumen

Story by Candy Gibson

Above: the excellent work of Associate Professor Simon Koblar in the Centre for Stem Cell Research is highlighted in the latest issue of the alumni magazine, *Lumen*
Photo by Randy Larcombe

Alumni

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Recovery on the way: expert

Will South Australia emerge from the global economic crisis relatively unscathed and enter a period of unprecedented prosperity?

That's the question being tackled in a new book edited by the University of Adelaide's Associate Professor John Spoehr.

The book, called *State of South Australia: From crisis to prosperity?*, was launched in Adelaide recently by the Premier of South Australia, the Hon. Mike Rann.

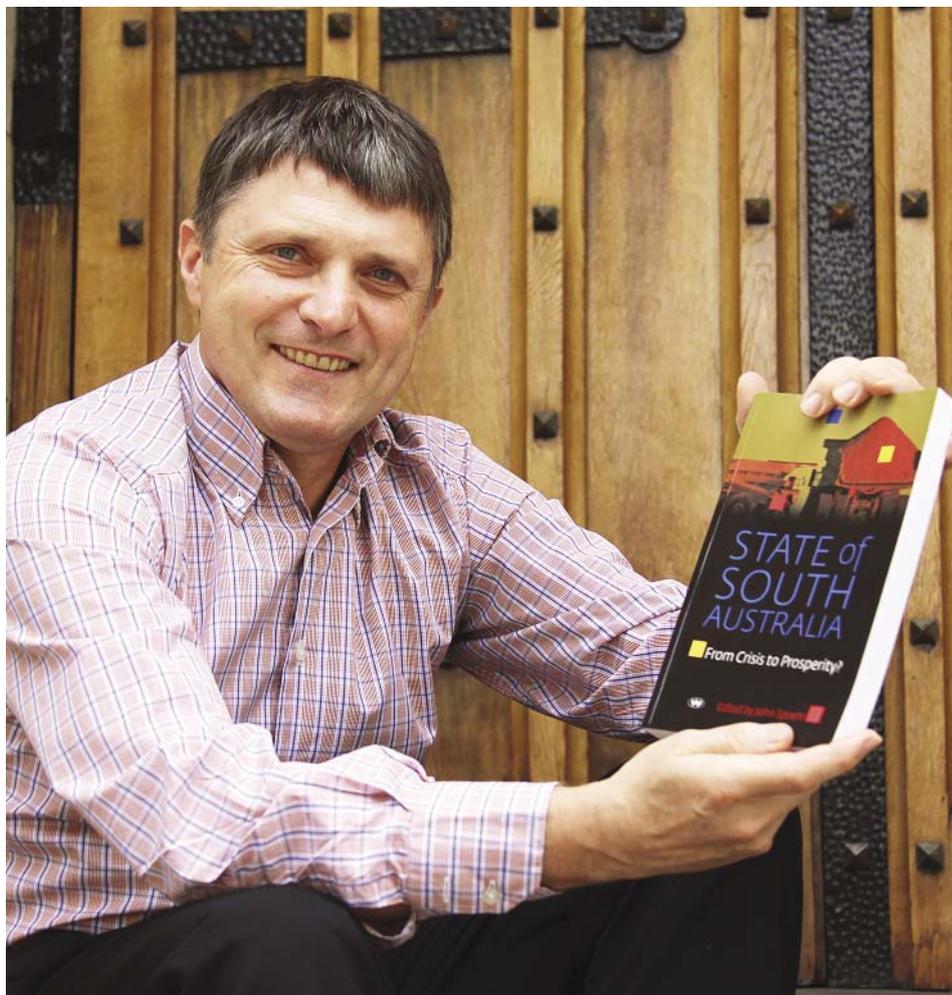
The book addresses a range of questions, offering a comprehensive analysis of key challenges facing this state.

Issues covered by more than 25 contributors to the book include: the state's changing population, Aboriginal policy, gender, health, education, industrial relations, law and order, social inclusion, the arts, environment, urban planning and infrastructure.

"The book contains revelations in each of these areas which point to the state's prospects of economic recovery in the context of the global economy," said Associate Professor Spoehr, Executive Director of the Australian Institute for Social Research and the Centre for Labour Research at the University of Adelaide.

"While the medium-term outlook is bright for South Australia, we face a difficult year ahead as the fallout from the global financial crisis leads to job losses.

"Nevertheless, as all booms end in bust, a recovery from the depth of recession will come in due course. When it does, South Australia will benefit greatly from the inevitable recovery in global demand for



mineral resources, and recent investments in defence manufacturing – including the air-warfare destroyer contract and the submarine expansion program – will bolster an otherwise sluggish manufacturing sector."

Associate Professor Spoehr said the expansion of mining, in particular Roxby Downs, would add significantly to South Australia's economic output.

"There is little doubt that global demand for mineral resources will reach new heights once the economic crisis subsides," he said.

"On the back of a mining boom, major contributions are expected from other sectors, including construction, finance and insurance, and property and business services.

"South Australia will also continue to be a major exporter of educational services, water resources technologies, wine and grain.

"The challenge for South Australia's future prosperity and sustainability is how rapidly the state is able to make the transition to a low-carbon economy. We must not lose sight of this as we grapple with the global economic crisis," he said.

Premier Rann said: "This text captures a pivotal period in our State's economic, social and cultural evolution. It provides a detailed snapshot of where we're at, and where we're headed. But crucially, it's an analysis that must be viewed through a

unique, contemporary lens. And *State of South Australia* represents another vital element of that ongoing dialogue.

"This is a most worthy resource, and I commend it to everyone with an interest, and a stake, in South Australia's future."

Associate Professor Spoehr is one of South Australia's leading social and economic researchers and commentators.

His previous books include *Beyond the Contract State: ideas for social and economic renewal in SA*, *Power Politics: the electricity crisis and you*, and *State of South Australia: Trends & Issues*.

This latest book is an update of the 2005 edition of *State of South Australia*. A fully revised edition of *State of South Australia* will be published every three years. Updates of selected chapters will be available at: www.aisr.adelaide.edu.au

State of South Australia: From crisis to prosperity? is published by Wakefield Press.

Adelaidean has one copy of *State of South Australia: From crisis to prosperity?* to give away to a lucky reader. To win, be the first to call +61 8 8303 5414. Please leave your name and contact details, include a daytime telephone number.

Story by David Ellis

Above: Associate Professor John Spoehr with a copy of *State of South Australia: From crisis to prosperity?*

Photo by David Ellis

Scientists leap horse genome hurdle

An international team of scientists, including researchers from the University of Adelaide, has cracked the genetic code of the horse.

Their findings, published in the journal *Science*, reveal critical information for mapping horse-related genetic diseases and understanding equine biology.

University of Adelaide genome expert and team member Professor David Adelson (School of Molecular & Biomedical Science) said the results would also be used by the racing industry to breed superior horses.

The team, led by animal geneticist Professor Claire Wade from the University of Sydney, sequenced the DNA of a thoroughbred mare named Twilight. The horse is kept at Cornell University in New York State.

"The horse's genome structure reveals remarkable similarities to humans and more than one million genetic differences across a variety of horse breeds," Professor Adelson said.

Better tests for equine genetic diseases, such as disorders of the muscle, therapies for respiratory disease and allergies in horses were already being made possible through increased understanding of equine biology.

"There are certain genetic disorders that we know are inherited, but we don't know what's actually causing them. With these results we will be able to identify the cause

and develop a genetic test to deal with them," Professor Adelson said.

One unexpected finding from the project was that the wild Mongolian horse (Przewalski's Horse) – once thought to be the ancestor of modern horses – looks very much like another horse breed, even though it has a number of different chromosomes.

Twilight's DNA reveals a genome that is slightly larger than a domestic dog and smaller than the human genome.

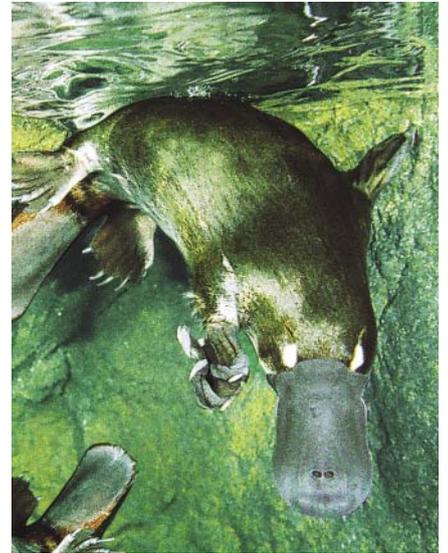
Professor Adelson said the horse genome was more "plastic" and changeable than that of humans. "This indicates that the horse DNA sequence is evolving at a more rapid rate."

The team also included researchers from The Broad Institute of MIT and Harvard.

Professor Adelson is Chair of Bioinformatics at the University of Adelaide. He was also part of an international project, completed earlier this year, to crack the genetic code of a female cow, the first mammalian livestock animal in the world to be sequenced.

Story by Candy Gibson

Photo by Justyna Furmanczyk



Platypus mysteries revealed

New insights into the biology of the platypus and echidna have been published, providing a collection of unique research data about the world's only monotremes.

University of Adelaide geneticist Dr Frank Grützner (School of Molecular & Biomedical Science) and his team have authored five of 28 papers that appeared recently in two special issues of the *Australian Journal of Zoology and Reproduction Fertility and Development*.

The articles shed new light on the extraordinary complex platypus sex chromosome system.

"For the first time we have looked at how the 10 sex chromosomes find each other during sperm development in platypus," Dr Grützner said.

"We discovered that a remarkably organised mechanism must exist in platypus, where sex chromosomes from one end pair first and then they go down the sex chromosome chain, just like a zipper. There is nothing random about it."

Dr Grützner and his colleagues also isolated and analysed for the first time the sequence of the male-specific Y chromosomes.

"Previously we knew nothing about the Y chromosomes because only the female platypus genome was sequenced. The data we found has given us valuable clues about the evolution of Y chromosomes in all mammals, including humans," Dr Grützner said.

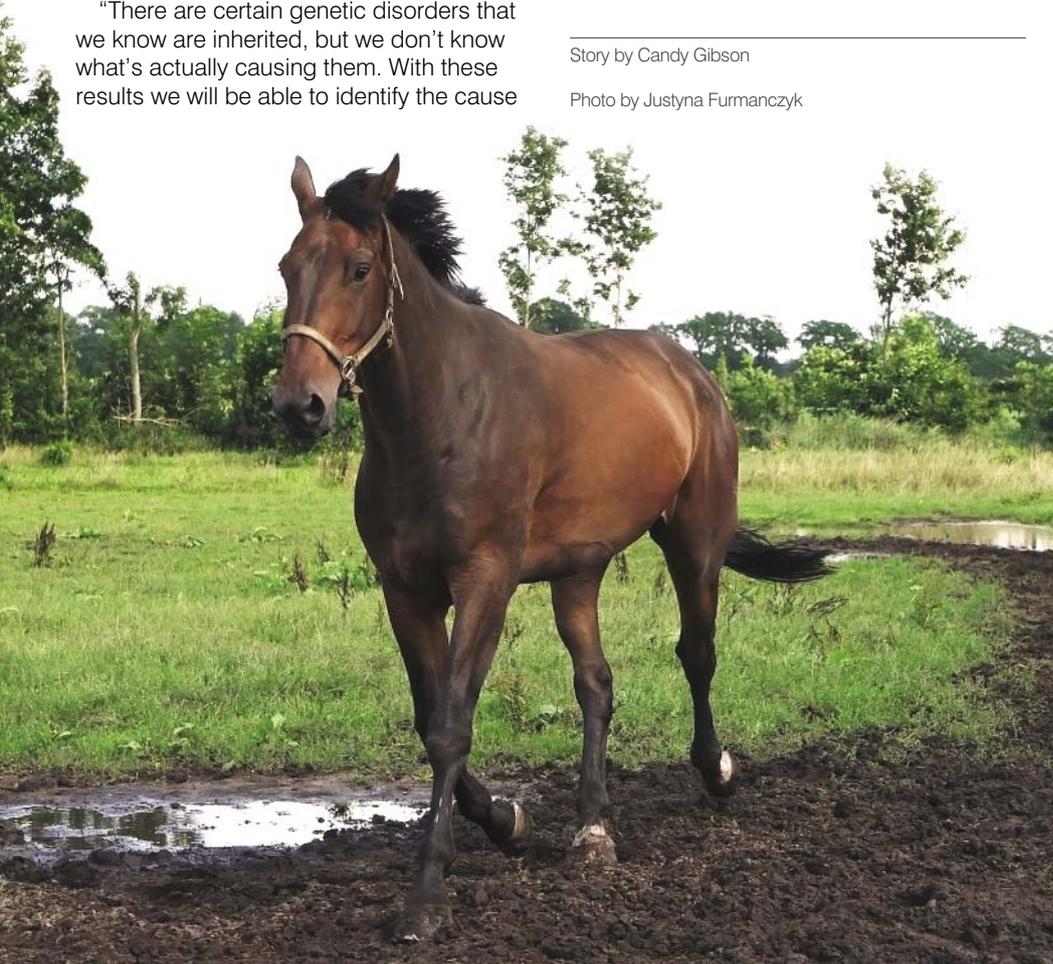
All 28 published articles in the CSIRO journals arose from the Boden Research Conference, "Beyond the Platypus Genome", hosted by the University of Adelaide in November 2008, which attracted researchers from around the world.

The published papers represent a wide range of monotreme research, from genome to field biology, population genetics and captive breeding, evolution to immunology, venom, sperm and milk in both the platypus and echidna.

"I expect these results to make a major impact in the field of monotreme research and mammal evolution," Dr Grützner said.

"This knowledge will also help us conserve these iconic Australian mammals," he said.

Story by Candy Gibson





Questions raised over gastric banding

A visiting Swedish obesity expert has questioned the increasing use of gastric banding in Australia at the same time that University of Adelaide researchers have won new funding to investigate the issue.

Leading obesity expert Professor Stephan Rössner – who gave a free public lecture at the University of Adelaide last month – said the growing trend to perform gastric banding operations in Australia would do little to stop the obesity epidemic.

Gastric banding is the most commonly performed obesity operation in Australia. Last year, 14,000 gastric banding operations were performed compared with 6000 in 2005.

However in Sweden, gastric banding is seen as a “slowly dying dinosaur” that often does not lead to long-term benefits, according to Professor Rössner, Director of the Obesity Unit, Karolinska University Hospital, Stockholm.

“In my country, 96% of all obesity surgery is done using an alternative procedure known as a gastric bypass, with close to 90% of these done using a minimally invasive approach,” Professor Rössner said.

“Gastric bypass is widely believed to be a much more effective alternative to gastric banding because it leads to long-term weight loss.”

The Federal Government’s Preventative Health Task Force recommended that obesity surgery be offered by public hospitals because of the increasing health problem. This recommendation has widely been interpreted to mean gastric banding, using an adjustable band placed around the upper end of the stomach, instead of gastric bypass.

In the latest round of funding from the National Health and Medical Research Council (NHMRC), researcher Dr Nam Nguyen was awarded \$428,250 to compare the two different types of obesity surgery.

Based in the NHMRC Centre of Clinical Research Excellence in Nutritional Physiology at the University of Adelaide and the Royal Adelaide Hospital, Dr Nguyen’s research may help to determine the most appropriate procedure for obesity surgery.

Professor Rössner’s visit to Adelaide was funded by the Northern Communities Health Foundation and supported by the CCRE in Nutritional Physiology, Interventions and Outcomes.



Folic acid link to asthma risk

A University of Adelaide study may have shed light on the rise in childhood asthma in developed countries like Australia in recent decades.

Researchers from the University’s Robinson Institute have identified a link between folic acid supplements taken in late pregnancy and allergic asthma in children aged between three and five years, suggesting that the timing of supplementation in pregnancy is important.

Associate Professor Michael Davies said folic acid supplements – recommended for pregnant women to prevent birth defects – appeared to have “additional and unexpected” consequences in recent studies in mice and infants.

“In our study, supplemental folic acid in late pregnancy was associated with an increased risk of asthma in children, but there was no evidence to suggest any adverse effects if supplements were taken in early pregnancy,” he said.

The University of Adelaide findings have been published in the *American Journal of Epidemiology*.

The study involved more than 500 women whose maternal diet and supplements were assessed twice during their pregnancy, with follow-up on their child’s asthma status at 3.5 years and 5.5 years.

Asthma was reported in 11.6% of children at 3.5 years and 11.8% of children at 5.5 years.

Nearly a third of these children reported persistent asthma.

Current public health guidelines recommend that women consume a supplemental dose of 400 micrograms of folic acid per day in the month preceding and during the first trimester of pregnancy to reduce the risk of neural tube defects in children.

“Our study supports these guidelines, as we found no increased risk of asthma if folic acid supplements were taken in pre or early pregnancy,” Associate Professor Davies said.

“However, these guidelines may need to be expanded to include recommendations about avoiding use of high dose supplemental folic acid in late pregnancy.”

He said the study found no evidence to link asthma with dietary folate, which is found in green, leafy vegetables, certain fruits and nuts.

Nearly half of all mothers in the study took a folic acid supplement pre-pregnancy and 56% met the required daily dosage of 400 micrograms in early pregnancy.

“These findings show there is a potentially important critical period during which folic acid supplement dosages may be manipulated to optimise their neuro-protective effects while not increasing the risk of asthma,” Associate Professor Davies said.

Story by Candy Gibson



Surf's up for eChallenge winners

An innovative system for texting surf and weather conditions to those keen to hit the waves has won a team of young entrepreneurs this year's University of Adelaide's eChallenge competition.

The team, Saxony's SMS, with members Simon Ratcliffe, Pretib Parthiban and Linda Palma, won the \$10,000 first prize at last month's eChallenge dinner at the National Wine Centre as well as the People's Choice prize and *The Advertiser* prize.

Saxony's SMS sends text messages to surfers, windsurfers and kitesurfers when conditions are "on" at their favourite beach, removing the need for frequent checking of internet sites and listening into surf reports on the radio.

Saxony's SMS founder and chief executive officer is Simon Ratcliffe, a 1993 Computer Systems Engineering graduate with First Class Honours from the University of Adelaide and a current History student.

Simon said Saxony's SMS has a business plan and product prototype and will now be undergoing focus group trials, further technology development and

market research with a view to a launch in summer 2010.

The eChallenge is run by the University of Adelaide's Entrepreneurship Commercialisation and Innovation Centre (ECIC) and each team must have at least one student member from any tertiary institution in South Australia.

Teams of up to six people develop a business plan for a new, previously unfunded business concept. Semi-finalists are paired with an experienced mentor from the business community.

"Each year the eChallenge captures the energy of young, bright entrepreneurs and channels it into investment-ready early stage companies," said ECIC Director Professor Noel Lindsay.

"It offers competitors unprecedented access to top South Australian business acumen. Past finalists have gone on

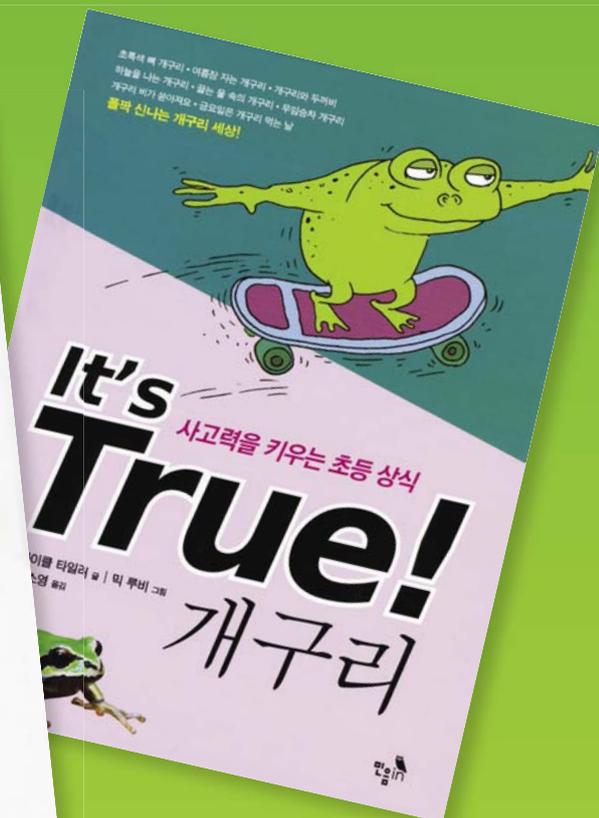
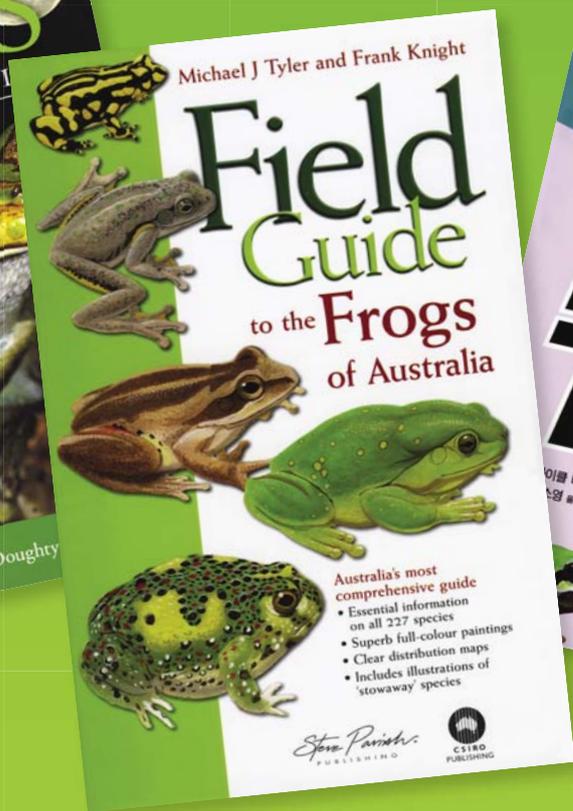
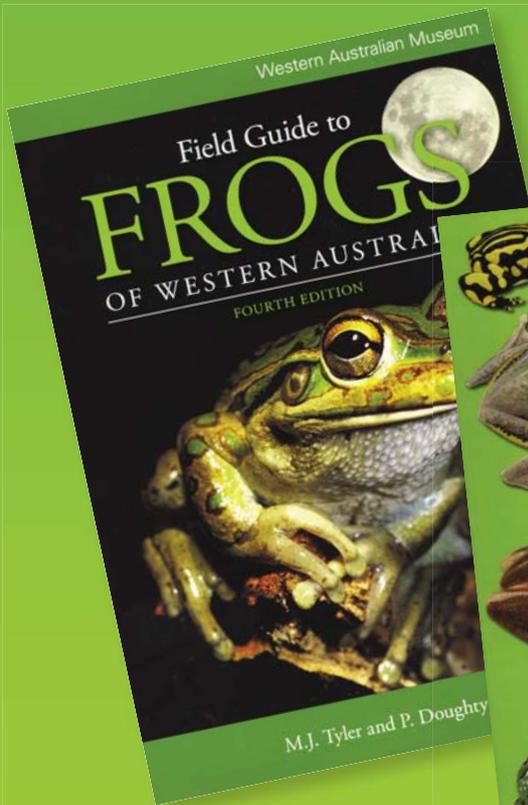
to develop successful and thriving businesses."

Second prize went to ArtNomad (Alex Ovchar, Sam Ellis and Mischa Saloukvadze) for a system for leasing artworks to businesses and other organisations.

Third prize went to Choice Touch Systems (Graeme Robertson and Christian Huber) for a computerised product comparison purchasing system that allows you to shop and compare products from different suppliers at the one site. Choice Touch also won the Vroom Prize and the Piper Alderman Prize.

Story by Robyn Mills

Above: The winning eChallenge team, Saxony's SMS, comprising (from left) Pretib Parthiban, Simon Ratcliffe and Linda Palma



Frog expert makes leap into Korea

Australia's foremost frog expert has three new books out this year – including one that is written for Korean children.

Associate Professor Mike Tyler, Visiting Research Fellow with the University of Adelaide's School of Earth and Environmental Sciences, so far has 23 books on frogs to his name.

Three of those have been released this year.

Field Guide to the Frogs of Australia is a comprehensive guidebook providing concise information about 227 species of native frogs and toads found in Australia, as well as a number of introduced species.

Published by Steve Parish Publishing and CSIRO Publishing, the book is full of colour paintings by Frank Knight, who receives a co-author credit for his artistic work.

"Often the problem with photographs is that they are taken from different angles in a range of different conditions. These gorgeous paintings by Frank Knight are a much more accurate representation of what each frog and toad looks like. And because there can be variations within the one species, we sometimes show different

images of the same species to help with identification," Associate Professor Tyler said.

He said the style of the guidebook would be familiar to bird watchers, with maps providing locations of where each species can be found, signature calls made by the frogs, and other details.

While the *Field Guide to the Frogs of Australia* is aimed at helping people to identify various frog species, another new book is primarily concerned with the biology of frogs.

The fourth edition of *Field Guide to Frogs of Western Australia* has now been released, co-authored by Paul Doughty from the Western Australian Museum, which is also the book's publisher.

"This is an important book because Western Australia is home to more than 80 of Australia's known frog species," Associate Professor Tyler said.

"That's a significant proportion of the nation's native frog species, and many of these species are found in very remote locations. More species are still being discovered in WA.

"Members of the general public who are interested in frogs will find this book very accessible, but we've also had a lot of interest from mining companies. The ecosystems that support these frogs can be

highly fragile and one would hope that the mining companies are paying more attention to such things."

Meanwhile, Associate Professor Tyler's third book of 2009 has been released, this time a children's book written for Korea.

Called *It's True!*, the book presents a range of interesting facts about frogs, with photographs and cartoon-like illustrations.

"I was approached to write a fun, educational book about frogs for Korea, and this is the result," Associate Professor Tyler said.

"We have made some amazing discoveries about frogs over the years, such as the gastric brooding frog which swallows its fertilised eggs, converting its stomach to a womb and giving birth to fully formed young through its mouth.

"Sadly, we now believe this species of frog to be extinct in Australia, along with about three or four other species."

It's True! is also being translated into Chinese and will be released in China in January.

Associate Professor Tyler is now working on a field guide specific to the frogs of South Australia, as well as another book about the use of frogs in environmental marketing.

Story by David Ellis

Who's making sci-fi history?

Don't blink – you might miss it.



The latest Doctor Who TV special emerging from the United Kingdom contains a prominent, if brief, reference to the University of Adelaide.

Doctor Who: The Waters Of Mars is part of a series of specials being broadcast around the world this year. To be shown in Australia on Sunday 6 December on ABC1, the special has already been broadcast in the UK and New Zealand, with North America to follow.

The action is set in a base on the planet Mars in the year 2059. One of the characters, played by Australian actor Peter O'Brien, is an astronaut called Edward Gold.

Early in the one-hour special, Gold's fictional biography is displayed prominently on screen. It reads:

"Gold grew up in Adelaide, Australia at a time when the country was seriously lagging behind in the Space Race. As a child Edward Gold was fascinated by space. His father has described how

he started building model rockets from cardboard and plastics.

"Educated at St Andrews [sic] School and St Peter's College, Adelaide before receiving a bachelor of engineering degree in mechanical engineering (with First Class honors) from the University of Adelaide in 2030. He completed a doctorate in the same subject at the University of Adelaide in 2034.

"After completing his studies, Gold accepted an offer from Lockheed in Atlanta. He became a U.S. citizen in March 2040, hoping to gain entry to NASA's astronaut program."

This fictional biography bears a striking resemblance to the biographical details of real-life University of Adelaide graduate and NASA astronaut Dr Andy Thomas.

Those who visit Dr Thomas's page on Wikipedia.org will be greeted with the following:

"Educated at St Andrews [sic] School and St Peter's College, Adelaide before

receiving a bachelor of engineering degree in mechanical engineering (with First Class honors) from the University of Adelaide in 1973. He completed a doctorate in the same subject at the University of Adelaide in 1978."

And: "As a child, Thomas was fascinated by space. His father has described how he started building model rockets from cardboard and plastics. After completing his studies, Thomas accepted an offer from Lockheed in Atlanta."

Actor Peter O'Brien is himself a former University of Adelaide student, having studied Science here during the 1970s.

Story by David Ellis

Above: Australian actor Peter O'Brien plays Edward Gold in *Doctor Who: The Waters Of Mars*, a character who appears to be based on University of Adelaide graduate Dr Andy Thomas (inset)
Photos courtesy of ABC Television and NASA



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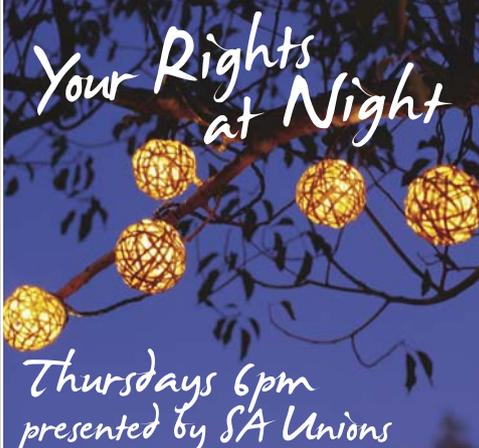
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Research Tuesdays

SHARING GREAT RESEARCH
WITH THE COMMUNITY



Generating Hope: With research showing stem cells can generate brain repair, could stroke damage soon be reversed?

As the greatest cause of disability in Australia, stroke takes an enormous toll on thousands of patients and their families every year.

Consequently, discovering how to repair the debilitating neural damage they cause is considered one of our greatest health challenges.

It's a daunting task, but one the University of Adelaide's Stroke Research Programme (a collaboration with The

Queen Elizabeth Hospital) is tackling head-on. And progress is being made.

The team's recent data shows stem cells obtained from adult teeth can be used to generate new brain cells and change the wiring of the brain. Could this be a path to recovery?

In this important presentation, programme leader Associate Professor Simon Koblar discusses the exciting possibilities.

WHEN: 5.30-6.30pm Tuesday 8 December

WHERE: Law Lecture Theatre 2 (Room 333), Level 3 Ligertwood Building, North Terrace Campus

ADMISSION FREE, RSVP ESSENTIAL

email: research.tuesdays@adelaide.edu.au
phone: +61 8 8303 3692

FOR MORE INFORMATION:

www.adelaide.edu.au/researchtuesdays

Simon Koblar is a clinical Neurologist, neuroscientist and teacher in both. He is Patron for Stroke SA and for the last 10 years has built the Stroke Research Programme as a collaboration between the University of Adelaide and The Queen Elizabeth Hospital

Connect, collaborate, create... and celebrate!

Featuring guest speaker Adam Spencer (702 ABC Sydney radio announcer, Triple J, ABC TV's *The Sleek Geeks*).

Join the team at Adelaide Research & Innovation (ARI) for Christmas drinks, to celebrate the University of Adelaide's 2009 applied research achievements.

Research at the Uni has certainly made an impact this year, delivering real results that contribute to Australia's social, economic, cultural and environmental wellbeing.

ARI, the University's commercial development company, is proud to be a part of this. We would like to take the opportunity to reflect on the year together with our partners – the University's researchers and their industry and government collaborators.

When: 4.00pm–6.00pm Wednesday 2 December

Where: Exhibition Hall, National Wine Centre of Australia, corner of Hackney and Botanic Roads, Adelaide

Cost: Free

RSVP: Online: www.adelaideresearch.com.au,
email: arip1@adelaide.edu.au,
fax: +61 8 8303 4355



Entrepreneurship, Commercialisation and Innovation Centre (ECIC) Alumni

End of Year Drinks

When: 5.00pm for 5.30pm Wednesday 2 December

Where: University Staff Club, North Terrace Campus

Cost: Free

RSVP: www.ecic.adelaide.edu.au/news/events/rsvp/alumni



Keys to the Universe Free Public Lecture Series

Modern Subatomic Physics: From the Big Bang to the Dark Side of the Universe by Professor Tony Thomas, Australian Laureate Fellow and Elder Professor of Physics, University of Adelaide.

Are there completely new groups of particles as suggested by supersymmetry? What is the nature of astrophysical dark matter? What are the fundamental particles of Nature and how do they compose the world in which we live?

Professor Thomas will describe some of the outstanding progress made in answering these questions, with an emphasis on phenomena where precise experiments, supercomputing and cross-disciplinary research have recently yielded new insights.

Presented by the School of Chemistry & Physics.

When: 6.30pm Thursday 10 December

Where: Union Hall, North Terrace Campus

Cost: Free – all welcome

Fridays Uncorked '09

Offering a vibrant Friday night venue for the Adelaide business community to wind down at the end of the week, taste fine wines from selected regions, enjoy a selection from the cocktail menu, and relax at this unique Adelaide icon.

www.wineaustralia.com.au

When: 4.30pm Friday 11 December

Where: National Wine Centre of Australia, corner of Hackney and Botanic Roads, Adelaide

Cost: Free entry including cocktail food.

Wine from \$4.50 per glass.

Music Theatre Symposium

A national Music Theatre Symposium will be held to celebrate the gifting of the Burden Collection of 18th century English music and drama to the Barr Smith Library. The event will include papers by some of Australia's foremost music theatre scholars.

UK opera authority Dr Michael Burden (University of Oxford) will present the first part of his collection as the culminating highlight of the symposium.

Dr Burden will also deliver a paper, *A Diva at the Opera*, on his research on the London theatre in the 18th century.

Hosted by the South Australian Chapter of the Musicological Society of Australia, in collaboration with the Special Collections Division of the Barr Smith Library.

When: 9.45am–6.00pm Saturday 12 December

Where: Ira Raymond Room, Barr Smith Library, North Terrace Campus

Cost: Free – but registration essential

RSVP: Dr Julia Szuster, phone 0405 103 854 or
email: julja.szuster@adelaide.edu.au



NRF Ride Like Crazy

The Neurosurgical Research Foundation (NRF) is fortunate to be one of the recipient charities from the SA Police Ride Like Crazy fundraising event.

This event will help to raise money for brain tumour research equipment for Professor Bob Vink, NRF Chair of Neurosurgical Research at the University of Adelaide.

For more information about how to register for the event or make a donation, simply visit: www.nrf.com.au

When: Sunday 17 January 2010



WANT TO KNOW MORE?

For more information about Coming Events please visit our News and Events website: www.adelaide.edu.au/news