Genetic study of our national icons

Most of us hold a picture of this animal in the palm of our hand every day. But few realise what an amazing creature the platypus is.

The Australian icon pictured on our 20 cent coin may hold the answers to many questions puzzling evolutionary biologists the world over.

For the past five years, University of Adelaide geneticist Dr Frank Grützner has devoted his time to solving the mysteries of the platypus’s genes and chromosomes. Why? Because this unique monotreme could give us some invaluable insights into the history of our own genes.

One has to go back 210 million years to find the last common ancestor between humans and the platypus, the earliest known branch in the mammalian lineage.

“Evolution filters out important genes,” Dr Grützner says. “By studying the platypus we can probably find the genes that play a crucial role in our own development.”

The platypus is unique for a number of reasons.

“They are egg laying, which is extraordinary for a mammal. They are venomous, they regulate their body temperature at 32 degrees – not 37 as most other mammals – and their reproductive system is a mixture of reptilian and mammalian. Their sperm looks exactly like chicken sperm. There’s a whole raft of extremely interesting stories with the platypus.

“There are still a lot of holes in our knowledge of the sex-determining genes in humans. If we can work out what is going on with the platypus, it could tell us something relevant to humans and fill some of those gaps,” Dr Grützner says.

continued on page 8
We make choices every day and sometimes those choices will have a major impact. Before the end of this year Australia will choose the Government which will shape society for the next few years. Much of the debate during the election campaign will be about economic issues and the happenings within marginal electorates. However, following the Labor Party decision to put higher education high on the electoral agenda and the subsequent Federal Budget which was led with a series of higher education announcements, we seem finally to have higher education being taken seriously as an election issue.

This would seem appropriate at a time when the demand for education and skills is high and not always being met. This failure to meet community needs in part reflects under-investment and a lack of clear thinking about our higher education system.

Just as Australia is making these decisions at a time of economic strength, so too is the University of Adelaide considering a new Strategic Plan at a time when our current financial strength permits us to consider a range of options.

Our last Strategic Plan written in 2002 and intended to take us to 2008 mapped out our direction for the University over that period. We have met or are on our way to meeting the targets and objectives we set and now is the time to make some decisions about the future.

We are inviting the entire University community to help decide how we can best do this.

We will also hope that whoever wins the election will be keen to invest in education and research as well as willing to look to new directions. I hope the politicians have read the Group of Eight discussion paper about designing a new policy architecture for higher education and university research, *Seizing the Opportunities*. We need diversity in the sector and we need fresh air. We must get rid of wasteful and complex regulations that frustrate the sector and hamper innovation.

It is time for us all to look to the future not with nervous apprehension but with nervous excitement.

JAMES A. McWHA
Vice-Chancellor and President

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From the Vice-Chancellor

Art & Heritage Collections

Bert Flugelman was born in Vienna, Austria, in 1923 and moved to Australia in 1938. Arguably his best known artwork in South Australia is The Spheres in Rundle Mall (affectionately known as the “Mall’s Balls”).

Many of Flugelman’s sculptures are made up of stainless steel geometric forms such as cones, spheres and pyramids that have been blown up to a monumental size.

Flugelman’s fine sense of style and occasion within a balanced sense of space is evident in Continuum which has been part of the University’s visual art collection since 1974, when Flinders University presented the sculpture as a gift to mark the Centenary of the University of Adelaide.

Anna Rivett, Collections Officer, Art & Heritage Collections

Continuum by Bert Flugelman in stainless steel. The sculpture is located outside the Johnson Building, North Terrace Campus. Image courtesy of Art & Heritage Collections
Reconciliation set in stone

The University of Adelaide’s strong support for national reconciliation is now quite literally set in stone. A new sculpture unveiled on the University’s North Terrace frontage on 1 June was created as a visual symbol of commitment to the reconciliation process and to the support of Aboriginal and Torres Strait Islander communities through education.

“The University developed a formal Reconciliation Statement in 2003 and its impact has been significant,” said the Vice-Chancellor and President, Professor James McWha. “We asked the artists to capture the spirit of that statement in their work and we are delighted with the result.”

The three-metre high granite sculpture was created by Indigenous artist Karen Casey and public sculptor Darryl Cowie – with assistance from 64 willing participants who took part in a handshake ceremony during last year’s Reconciliation Week celebrations at the University.

Plaster imprints were taken of each handshake, and the castings are central to the final sculpture. They appear as both positive and negative shapes in a manner reminiscent of a fractured rock shelf containing fossilised forms.

“Reconciliation is an innovative and exciting work and one that will reward regular viewing,” Professor McWha said.

“It reflects our commitment not just to support and further the process of reconciliation, but also to acknowledge the traditional owners of this land, the Kaurna people, alongside those who were instrumental in creating this fine university.”

The sculpture is located in Goodman Crescent, a major pedestrian thoroughfare which links the Mitchell Building, Elder Hall and Bonython Hall. Nearby statues honour two of the University’s early benefactors – Sir Thomas Elder and Sir William Watson Hughes.

As part of the launch guests placed reconciliation messages in a time capsule to be locked away for 10 years.

The success of last year’s initial event also is still being felt. Ms Casey and Mr Cowie have since held two similar Let’s Shake events in Melbourne and hope to collect 1000 “handshakes” by 2008 for public exhibition.

“It is a great concept. This sculpture is important to us because as a University community we firmly believe that acknowledgement of the past is vital if we are to achieve the genuine sense of reconciliation that Australia seeks,” Professor McWha said.

New Chair of Indigenous Council

Professor Roger Thomas, the Director of Wilto Yerlo, the University of Adelaide’s Centre for Australian Yerlo Research and Studies, has been appointed Chair of Australia’s second Indigenous Higher Education Advisory Council.

The 15-member Council advises the Federal Government on higher education policy. Professor Thomas (pictured second from left) was a member of the first Council, which served for two years and helped bring about important changes to Abstudy and recent Budget allocations to assist 1000 Indigenous students.

He also is a member of the World Indigenous Higher Education Council and recently served a three-year term on the South Australian Government’s Social Inclusion Board.

Professor Thomas has been prominent in Aboriginal Affairs at a State and national level for many years and is respected throughout South Australia for his work with and for his people. He has a strong background in welfare and higher education, initially at TAFE and for the past 10 years at the University of Adelaide.

“It is a great honour to lead this Council, which plays a key role in representing the interests of Aboriginal and Torres Strait Islander students and staff across the nation,” Professor Thomas said.

“There are plenty of issues to be addressed and my aim will be to ensure that the second Council is as relevant and effective as the first. Our aim is to make a difference.”

Among other roles, the new Council will also:

• make recommendations for awards under the Indigenous Staff Scholarships program
• develop strategies for increasing the number of, and enhancing career paths of, Indigenous staff employed in higher education institutions
• convene an annual Indigenous Higher Education Conference to discuss research and policy directions; sector/institutional achievements; successful innovations and best practice measures.
$3m grants awarded for healthy start to life

**Health**

Two University of Adelaide researchers have been awarded more than $3 million from the National Health and Medical Research Council (NHMRC) for research into the social, environmental and hereditary factors that impact on the health of Australian children.

The two grants awarded to the University of Adelaide represent almost half of the $6.2 million in total funding announced nationally by the Federal Government recently.

The grants have been awarded to Associate Professor Michael Davies (Obstetrics & Gynaecology) and Associate Professor Vivienne Moore (Public Health) both members of the University’s Research Centre for the Early Origins of Health and Disease.

“It has taken a number of years for research into the early origins of disease to be fully appreciated by the medical and scientific communities and by funding bodies,” Associate Professor Davies said.

“The funding that we are now receiving signifies a change in thinking in Australia into the need for more research into this vital field.”

Associate Professor Davies, who is Co-Director of the Research Centre, said the latest funding is further recognition of the uniqueness and quality of the research groups and the high international standard of work being conducted within the centre.

“With this announcement, we are now chief investigators on seven major grants into the early origins of health and disease totalling more than $14.1 million in funding from various sources,” he said.

“Our work aims to have an impact on the future health of Australians by understanding the long-term consequences of social and environmental influences on fetal development, including lifestyle.

“We see our research informing both subsequent basic research and contributing to public health policy.”

In total, seven grants – called the NHMRC Healthy Start To Life For All Australians Strategic Awards – were announced by the Minister for Health and Ageing, the Hon. Tony Abbott. The winning projects at the University of Adelaide are:

- $1,961,375 to a team led by Associate Professor Michael Davies (Discipline of Obstetrics & Gynaecology) – for a study into intergenerational health among women (mothers, daughters and grand-daughters), and how conditions in pregnancy can affect the reproductive health of offspring in successive generations. This study has a focus on the risk of metabolic disorders, such as diabetes, and aims to help predict and prevent these disorders;
- $1,090,725 to a team led by Associate Professor Vivienne Moore (Discipline of Public Health) – for a study into the early life influences (pre-birth and infancy) on obesity and fat patterning in children, looking at critical periods, environmental determinants and the socio-cultural context. The project also aims to identify practical opportunities for prevention, focusing on mothers and their infants.

**Weight loss study seeks young women**

Young, overweight women are needed for the second round of a CSIRO Human Nutrition and University of Adelaide study investigating a drug that may promote weight loss.

University and CSIRO researchers are using a combination of the drug Metformin, exercise, diet and Internet support in a 12-month clinical trial.

Lead researcher Dr Manny Noakes, co-author of the CSIRO Total Wellbeing Diet, said that 41% of women experience significant weight gain in their mid to late twenties, contributing to Australia’s rising trend of obesity.

Dr Noakes and the University’s Research Centre for Reproductive Health need volunteers to take part in the study which is investigating the weight-reducing potential of Metformin. There is already some evidence that the drug improves insulin sensitivity and has resulted in some weight loss in individuals, including women who suffer from Polycystic Ovary Syndrome.

Physiology PhD student Siew Lim is conducting the trial under the supervision of Dr Noakes, Dr Peter Clifton and Professor Rob Norman.

Women aged between 18 and 35 are required for the study, which includes a three-month weight loss program followed by a nine-month weight maintenance program.

Participants need to be generally healthy (i.e. no known cardiovascular disease, diabetes, cancer, etc), although women suffering from Polycystic Ovary Syndrome are welcome to volunteer. To register for the study, email youngwomenstudy@csiro.au

**Adelaide Research & Innovation Impact Awards**

The inaugural Adelaide Research & Innovation Impact Awards (aria’s) recognise and reward University of Adelaide researchers and affiliates who are successfully partnering with industry on R&D projects that are making an ‘impact’ in the community, the State and around the World.

$10,000 Excellence in Innovation & Entrepreneurship

$10,000 New Generation Excellence in Innovation & Entrepreneurship

$10,000 Growth in Contract Research

$5,000 Most Exciting New Disclosure

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**Apply now**

Brought to you by Adelaide Research & Innovation Pty Ltd
New SIDS research to study protein link

An Australia-first study led by the University of Adelaide could help identify the cause of Sudden Infant Death Syndrome (SIDS), one of the world’s most tragic medical mysteries.

Paediatric pathologist Professor Roger Byard has launched a joint research project with the University of Aarhus in Denmark to study the presence of a protein found in some babies who have died from SIDS.

The project will investigate whether changes in brain levels of Amyloid Precursor Protein (APP) in infants may be a marker for potentially deadly breathing difficulties. APP is a protein which accumulates in the brain when there has been an injury to nerve fibres.

Professor Byard said the brain tissue of about 200 children who had died of the syndrome in Adelaide and Denmark would be tested for APP.

“Evidence that the protein is present in SIDS babies will not lead to a cure or a diagnostic test, but will help researchers understand the cause. It could also help prevent the syndrome recurring in the same family,” he said.

“It will help us to understand why these children have died – because they may have trouble breathing and that’s not been shown before – but it will also help with families who have already had a SIDS death.”

The University of Adelaide is one of the few centres in Australia which has looked at the presence of APP in SIDS babies.

Preliminary work by Professor Byard’s team has recently been published in the American Journal of Forensic Medicine and Pathology, resulting in the commissioning of the groundbreaking research project.

Funded by SIDS and Kids SA, the innovative study is the first large scale collaborative project on SIDS between Australia and Europe.

“This is an excellent opportunity to do joint work between our two institutes that could have real importance not only in Europe and Australia, but for the rest of the world.”

Professor Byard said researchers now believed that SIDS was not just one disease, but was due to a whole series of different factors to which infants were predisposed.

About one in 3000 babies dies of SIDS each year in Australia.

Story by Candy Gibson
Young professional of the year

University of Adelaide academic Dr Eleanor Parker has been named Australia’s 2007 Young Professional of the Year by Professions Australia.

Dr Parker, 29, is a lecturer in the School of Dentistry who previously worked as a clinical dentist in Port Augusta and was involved with teaching and research through the Spencer Gulf Rural Health School in both Port Augusta and Whyalla.

She lived in Port Augusta for a number of years after graduating from the University of Adelaide in 2000 and played a significant role in establishing a dental service for the Aboriginal community within the Pika Wiya Health Service.

“I went to a public high school in Whyalla and shared classes with a number of Aboriginal students. I became aware of a number of the issues they face and had an idea that this was an area where I could get involved and achieve something,” Dr Parker said.

“After I completed my dental training I found out that the local Aboriginal community really wanted a dental service and that motivated my decisions.”

Dr Parker returned to the University of Adelaide in 2006 and is now the co-ordinator of first year clinical practice. However she still has strong links with Pika Wiya through her research and assists the current staff with planning and recruitment.

She said she was “very flattered” by the Young Professional of the Year award, which she hoped would be shared by the many dentists who were working in remote areas of Australia. “I have been lucky to work with some very committed people,” she said.

Dr Parker was nominated by the Australian Dental Association and was chosen from what the President of Professions Australia, Mr Frank Payne, described as “a particularly strong field”.

The award is intended to encourage and recognise the achievements of young professionals who have demonstrated a noteworthy commitment to excellence and innovation and worked to promote their profession as a whole.

Professions Australia is the business name of the Australian Council of Professions.

Story by David Ellis

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The science of making profitable decisions

The University of Adelaide’s Research Tuesdays seminar series continues on Tuesday 10 July at 5:30pm.

In the modern information era, managers must recognise the competitive opportunities represented by decision-making tools. Adaptive Business Intelligence is a new family of systems that combines techniques to assist decision-makers in complex, rapidly changing environments. These systems address the fundamental question: What is likely to happen in the future? Professor Zbigniew Michalewicz from the University of Adelaide’s School of Computer Science introduces the concepts behind Adaptive Business Intelligence, which aims to provide significant cost savings and revenue increases for business.

Zbigniew Michalewicz has over 30 years’ academic and industry experience and is a best-selling author in this field.

Coming up in the series...

14 August
Professor Rob Norman
The reproductive revolution: have we gone too far?

11 September
Professor Tanya Monro
Optical fibres: our future beyond telecommunications

For more information: Visit the University of Adelaide’s Research website: www.adelaide.edu.au/research

The University of Adelaide

www.adelaide.edu.au

International honour for orthodontics pioneer

A former University of Adelaide academic who revolutionised orthodontics has been awarded dentistry’s highest international honour.

Dr P Raymond Begg has become only the 17th person – and the first Australian – to be inducted into the Hall of Fame at the Paris-based Pierre Fauchard Academy (PFA).

Dr Begg, who died in 1983, lectured in the University of Adelaide’s Dental School for 38 years while also working in private practice. He developed a new philosophy for diagnosing orthodontic problems and a new mechanical system for moving teeth.

Permanent displays dedicated to the “Begg technique” can be found in the Smithsonian Institute in Washington DC, the Library of the American Dental Association in Chicago and the PR Begg Museum at the University of Adelaide.

“This is a significant honour as the Hall of Fame celebrates the highest achievers in all fields of dentistry, not just orthodontists. Dr Begg has been ranked among the very best,” said the PFA’s International Trustee for Australasia, Dr Jonathan Rogers.

Born in a tent in 1898 in the Western Australian goldfields but raised in Adelaide, “Tick” Begg, as he was known, planned a career in medicine before noticing the real need for people to have their “crooked teeth” corrected. He studied in Melbourne then worked in California before returning to South Australia.

He was awarded a Doctorate of Dental Science by the University of Adelaide in 1935 and was made an Officer of the Order of Australia (AO) in 1981. The PR Begg Chair of Orthodontics at the University was named in his honour.

Orthodontics was Dr Begg’s passion and he continued to work long after his formal retirement. He registered his last patent in 1982, at the age of 84.

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Deputy Chancellor honoured

A passionate commitment to business, commerce, the arts and education has earned University of Adelaide Deputy Chancellor Ross Adler the highest accolade in this year’s Queen’s Birthday Honours. Mr Adler was last month awarded the Order of Australia Companion in the General Division (AC) – the only South Australian to receive the honour in 2007.

The recognition is the latest in a string of awards over the past two decades for the well-known South Australian. Already an Officer of the Order of Australia (AO), Mr Adler is also the recipient of a 2003 Centenary Medal for outstanding service to Australia’s international trade.

The former managing director of Santos and current chairman of the Port Adelaide Maritime Corporation and Adelaide Festival of Arts, Mr Adler was appointed Deputy Chancellor of the University of Adelaide in March.

“In terms of the University, I see my primary role as supporting the Chancellor, the Honourable John von Doussa. The combination of his legal background and my business experience will, I hope, serve the University in good stead,” Mr Adler said.

“Everybody understands the problems that universities are facing today in their battle to be financially independent and also to maintain access to foreign students. On the plus side, the Vice-Chancellor Professor James McWha is doing a lot to engage the broader community.

“It is impressive to see the way the University is responding to the challenges and opportunities in its path.”

Mr Adler described the Queen’s Birthday Honour as a “nice surprise,” crediting his wife with sharing many of his responsibilities across a broad spectrum.

“This award reflects a body of work over a long period of time. I have always been a passionate advocate of South Australia and feel a great responsibility to achieve the best outcomes for the State, whether in business, education or the arts.”

Queen’s Birthday Honours 2007

Congratulations to those members of the University of Adelaide alumni community whose contributions to their field and their community were acknowledged in the 2007 Queen’s Birthday Honours List.

Companion in the Order of Australia (AC)
Mr Ross Adler AC
(MBA 2004)
for service to business and commerce, particularly through the promotion of international trade and as a contributor to company and commercialisation development in Australia, to the community through administrative roles with educational institutions, and as a supporter of the arts.

Member of the Order of Australia (AM) in the General Division
Professor Patrick De Deckker AM
(PhD 1981, DSc 2002)
for service to science through research and teaching in the areas of palaeoclimate studies, salination and climate change, and through the initiation and support of international scientific collaboration.

Professor Robert D Fraser AM
(MBBS 1970, MD 1989)
for service to medicine, particularly in the area of spinal surgery as a clinician, to medical education and research, and through contributions to a range of professional organisations.

Mr Fraser J Vickery AM
(Dip7 (Further Ed) 1988 SACAE, BEd (In-Serv) 1989 SACAE)
for service to conservation and the environment, to the development and promotion of ecotourism in South Australia, and to the Indigenous community.

Member of the Order of Australia (AM) in the Military Division
Dr Gregor K Bruce AM
(MBBS 1969)
for exceptional service to the Royal Australian Air Force Specialist Reserve.

Public Service Medal (PSM)
Mr Andrew F McPharlin PSM
(IBE (Civil (Hons)) 1977)
for outstanding public service in the field of water management.

Emergency Services Medal (ESM)
Mrs Cheryl L Dalling ESM
(Grad Dip App Hist St 1997)
South Australia Emergency Services.

Medal of the Order of Australia (OAM)
Dr Shelley Barker OAM
(PHD 1990)
for service to entomology through research and identification of new beetle species, as an author, and to science education.

Mr Peter Brokensha OAM
(IBE 1995)
for service to arts administration, particularly through the establishment of the Argyle Arts Centre, to programs supporting Indigenous arts and crafts people, and to the community.

Ms Margaret L Flint OAM
(BA 1972)
for service to the Anglican Church of Australia in a range of committee roles, and to the community through women’s organisations.

Dr Robert E Holloway OAM
(RDA 1968, RDAT 1988, MagSc 1992, PhD (Ag & Nat Res Sc) 1997)
for service to primary industry, particularly as a contributor to dryland farming research and development.

Dr Terence H Lee OAM
(Former University staff)
for service to viticulture and to the wine industry through research and development organisations, wine industry bodies and government advisory roles in Australia and overseas, and through tertiary education in the fields of viticulture and oenology.

Mr John D Nettletfold OAM
(MBBS 1973)
for service to medicine, particularly as a surgeon in rural South Australia, and to the community.

Alumni

“It is impressive to see the way the University is responding to the challenges and opportunities in its path”
Age indicator for child restraints

The proposal is significant because it is age-based and because it would require special restraints up to the age of seven. Current laws are less specific and, according to Dr Anderson, “were being misinterpreted as saying that it is not illegal to restrain a child over the age of one with an ordinary adult seat belt”.

The CASR research, which is still awaiting publication, made two main findings.

The first was that many parents did not know a child’s height and weight, or simply got them wrong, and often were confused about when the child would outgrow a restraint or booster seat. Consequently, a survey found 28% of children under six were in inappropriate restraints for their size.

The important second finding was that age-based rules could be adopted without changes to existing restraints because current Australian standards require significant overlap between restraints. A forward facing child seat must be rated up to 18kg (though tested for more), for example, but the next type of restraint (booster seat) must be suitable from 14kg.

“That means that age-based rules will work even though not all children are the same size at the same age,” Dr Anderson said.

Story by Nick Cane

Automotive Safety

Proposals to introduce new national standards for child restraints in cars had their genesis at the University of Adelaide – and the timing was perfect.

Earlier this year the Deputy Director of the University’s Centre for Automotive Safety Research (CASR), Dr Robert Anderson, helped prepare a report for the National Transport Commission (NTC) examining current and proposed amendments to the Australian Road Rules.

Some professionals in the area were advocating the inclusion of weight and height guidelines in the proposal in some form, until Dr Anderson threw a new report into the mix.

With colleagues Paul Hutchison and Sally Edwards he had just completed a study that strongly recommended age-based rules be adopted and used to influence future design standards.

The NTC did further analysis then released draft laws which would require children to be restrained in a rearward facing capsule up to six months of age, then a forward facing child seat until four years and a booster seat until seven. The public was given until the end of June to comment.
The University of Adelaide is prominent in the latest showcase of Australia’s scientific prowess. Three past or present students are among 15 high achievers featured in a new publication to celebrate more than 20 years of Australia’s involvement in the prestigious International Science and Mathematics Olympiad programs.

They include Dr Matthew Sorell – now a lecturer in the School of Electrical and Electronic Engineering – who was part of the hastily assembled first Science team which travelled to Jena in the then East Germany for the International Physics Olympiad.

The year was 1987 and Dr Sorell was in Year 12 at St Peter’s College. “We didn’t do well at all,” he recalls, “but we scored more points than the organisers expected.”

Just as importantly, they returned inspired to tutor future competitors and Australia now competes annually in each of five separate Olympiads – Physics, Chemistry, Biology, Mathematics and Informatics.

Our other featured “Olympiad alumni”, Alex Flint and Pat Coleman, each went to two Informatics Olympiads, competing together in 2003 when Pat won a bronze medal, placing him in the top half of a high-calibre, 300-strong field. Alex was then at Glenunga High School and Pat at St Peter’s College. They reunited at university, where Pat is in the final year of his Bachelor of Computer Science and Alex his Honours year, and decided to relive the Olympiad experience by putting together a team to compete in the annual international competition run by the US Association for Computing Machinery.

The University of Adelaide team won the national division in both years that they took part, allowing them to again represent Australia overseas. And the tradition continues at the University.

Alex has since completed an internship with Google Australia and will begin work with the company as a software engineer next year. “It all indirectly flowed from the Olympiad,” he said. “Without that I wouldn’t have wanted to get the ACM team started and wouldn’t have learned what I’ve learned.”

The Olympiads are for the best of the best and are extremely intensive. To prepare, Year 11 and 12 students have about two weeks to cram in the core knowledge from a first-year level university course.

“More than 400 students have represented Australia over the years from all over the country so to have three of the 15 with links to one university is a strong showing,” Dr Sorell said.

Each year more than 4,000 senior secondary students sit the National Qualifying Examinations for Science (Biology, Chemistry and Physics) and Mathematics.

“For the past 20 years Australian Science Innovations has been privileged to work with the hundreds of inspired and talented young people whom we recognise as being our leaders and achievers of the future,” said the Chair of Australian Science Innovations, Mr Peter Russo. “It has been a wonderfully rewarding journey for all concerned.”

All three University of Adelaide alumni say the Olympiad was an unbeatable experience and encourage others to get involved. “It opens your eyes to more things that can be done,” Dr Sorell said.

The commemorative publication, Uncovered-Discovered, was launched in Canberra on June 21 by The Hon. Julie Bishop, Minister for Education, Science and Training.

Above from left: Matthew Sorell, Alex Flint and Pat Coleman

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Story by Nick Carne
South Australia’s most successful student racing car team has its sights firmly set on the number one position at this year’s Formula SAE national championships.

University of Adelaide Racing Concepts, a team comprised entirely of university engineering students, recently launched its bid for the top spot in 2007 with a drive display for media and sponsors at the Torrens Parade Ground.

Formula SAE is a global competition run by the Society for Automotive Engineers (SAE), which sees teams of university students from around Australia and the world designing and building an open-wheel, formula-style race car. The teams compete in a series of performance and reliability tests, with prizes in a number of different categories.

The University of Adelaide team – a previous winner of the prestigious design event – says it’s ready to challenge for the number-one spot on the national circuit this year.

“The new car that we’re developing for 2007 will be our best yet,” said the Managing Director of the team, final-year engineering student Costa Casiou.

“Formula SAE gives our team members the opportunity to take the latest knowledge of design and manufacturing and apply that to a real project, which is why each year is an improvement on the last. We believe this season will be our most successful of all, and we’re aiming for the chance to become the Australian champions and to compete against other teams from around the world.”

Traditionally, only final-year engineering students at the University have participated in Formula SAE. From this year, engineering students at all levels will have a chance to be exposed to the race car project.

“We think it’s important that students as early as first year have the opportunity to get involved in Formula SAE, because they will learn a lot from the experience and have a much better understanding of the project by the time they get to final year,” Costa said.

“We’ve already had input on our new car from a number of third-year students and one second-year student. Exposing students earlier to the project will greatly benefit Adelaide’s competitiveness in the long-term,” he said.

At the Torrens Parade Ground, students – as well as University Vice-Chancellor and President Professor James McWha and other senior staff – displayed their driving prowess in last year’s Formula SAE car.

Professor Peter Dowd, Executive Dean of the Faculty of Engineering, Computer & Mathematical Sciences, said: “One of the important lessons our students learn through this program is the ability to turn theory into reality on every level – from the design, build and maintenance of the car, right through to the management of the team and even dealing with sponsors and media.

“The high quality of our students, combined with experiences such as the Formula SAE project, means that they become outstanding graduates ready to embark on major challenges as professional engineers.”
Research

It’s well known that humans have much in common with apes, but less well appreciated that when it comes to our sinonasal anatomy we are pretty close to sheep. That may not sound much to boast about, but it has helped University of Adelaide PhD candidate Dr Alkis Psaltis make an important discovery about Rhinosinusitis, a debilitating condition that affects up to 14% of people in the Western world.

In turn, that research has won Dr Psaltis two major awards: the Maurice H. Cottle Honour Award from the American Rhinologic Society (shared with co-researcher and University of Adelaide masters student Dr Kien Ha) and the Sir Edward Hughes Memorial Clinical Research Award in surgery from Monash University.

Both awards are prestigious, and the latter was also historic – it has never before been won for research outside the field of general surgery or by a South Australian. “It really was a great honour,” Dr Psaltis said.

Rhinosinusitis can be relatively tame. Most of us have experienced what we think of as a head cold, which usually passes within a week. However, more than one person in 10 people suffers from chronic rhinosinusitis, which can require multiple courses of antibiotics and even surgery. Symptoms such as nasal discharge, facial pain and headaches can plague them for months each year.

Dr Psaltis’ research set out to investigate if, and if so how, bacterial biofilms are linked to the development of chronic rhinosinusitis.

Biofilms themselves are an interesting story. In the 1880s a Dutch lens maker discovered that bacteria do not always exist in the then well-known, free-floating form which is easy to investigate under a microscope. In fact, in 99% of cases bacterial cells encase themselves in a protective matrix and attach themselves to whatever they want to attack (dental plaque is a good example).

Their genetic profile changes when they do so, and this helps make biofilms very hard to identify and extremely difficult to treat.

The medical community largely ignored this discovery until about 20 years ago, but since then has linked biofilms with everything from medical equipment to conditions such as cystic fibrosis and chronic tonsilitis.

Previous research also has suggested that biofilms are present in as many as 90% of chronic rhinosinusitis cases, but Dr Psaltis’ findings suggest otherwise. First working with sheep, then humans, he found a link in only 50% of cases, but a strong link where people suffer very bad long-term effects.

A key to his findings was access to the University of Adelaide’s state-of-the-art Confocal Scanning Laser Microscope, which provides significantly more accurate results than standard electron microscopes.

“We have not yet established a direct causal relationship linking biofilms to chronic rhinosinusitis, but there is strong evidence that in the very least they cause it to persist and become a significant problem,” he said. “Some people never really recover.”

Dr Psaltis’ findings will be published in several US academic journals this year and he has been invited to address the American Rhinologic Society again in September.

Much of the research, under the supervision of Professor Peter-John Wormald, has been carried out at the Queen Elizabeth Hospital where Dr Psaltis is also an ear, nose and throat registrar.

His next project – again starting with sheep – is to try to treat or remove biofilms, either mechanically or by dissolving them in solution. Initial in vitro trials with both options are promising.
When the University of Adelaide’s 100th Rhodes Scholar Nicole Krzys heads to her studies at Oxford University she will have a symbol of South Australia’s proud pioneering heritage to carry with her.

The University recently held a special presentation ceremony to celebrate Nicole’s success last year in becoming the University’s 100th Rhodes Scholar. She was presented with a unique memento – an RM Williams travelling bag branded with the University’s official coat of arms and the number 100.

University of Adelaide Vice-Chancellor and President Professor James McWha said: “This presentation to Nicole aims to recognise and emphasise the importance of excellence within the University’s and South Australia’s proud heritage.

“In the same way as our pioneers of the past, we send our Rhodes Scholars out on a great adventure – to further their achievements, establish their careers and, we are sure, to make an impact in their field.

“What began with Adelaide’s first Rhodes Scholar in 1904 – Norman Jolly – has become a legacy of brilliant Adelaide scholars in all fields of study spanning more than 100 years.

“Nicole has become part of that history and tradition and we hope to hear great things from her over the coming years.”

Nicole graduated from the University of Adelaide last year with a Bachelor of Medicine/Bachelor of Surgery and an Honours degree in Philosophy and this year is completing her medical internship.

She will head to Oxford University next year to begin her studies for a D.Phil (PhD) in Philosophy and will focus on cognitive science and schizophrenia.

“The Rhodes Scholarship is an amazing opportunity to develop my understanding in this area and to contribute to the treatment of mental illness,” she said.
Three University of Adelaide graduates have shared second place in an international musical competition in Germany even though none of them can actually play their violin – at least not in a traditional sense.

Chin Hooi Lee, Joshua Chia and Boon Yao Hong are all engineering graduates, and their skills were applied to developing a robotic system that allows a computer to control the bow and make otherwise conventional violin music.

Originally created as their final-year university project, the RoboFiddler was selected by National ICT Australia (NICTA) to be Australia’s representative at the inaugural Artemis Orchestra Competition, which was held as part of the Artemisia Association 2007 Annual Conference in Berlin.

They shared second place with a Finnish team that played a flute. A German team with a recorder won the gold. "I may be biased but I think we were a crowd favourite," said NICTA’s CEO, Dr David Skellern.

NICTA sponsored the trip, even bringing graduate Chin Hooi Lee back from Malaysia two weeks early to help with final preparations. A fourth original team member, Beinjy Lim, was unable to take part.

"NICTA found out about RoboFiddler on our website, were excited by its potential and got in touch," said the Head of the University of Adelaide’s School of Mechanical Engineering, Professor Colin Hansen. "That’s quite a coup given that this was a student project on a student budget."

"We are obviously delighted with the recognition."

The system links a conventional laptop computer to a micro controller that controls both a robotic bow arm and a series of six metal “fingers” that allow 28 notes to be played.

“It is a complex system because the bow needs to be told not only which string to play, but at what angle and speed to play to ensure a clean sound,” Professor Hansen said. "The result is not up to orchestra standard, but it is an impressive piece of engineering.”

The RoboFiddler performed two pieces during the competition: the traditional piece Soldier’s Joy, and the first part of Book 1 of German composer Hans Sitt’s 100 Etudes, Op. 32.
**The Hon. John William Perry AO QC**

Recently Retired Justice of the Supreme Court of South Australia

Councillor, University of Adelaide 1995-2004

Born: 2 June 1937, Adelaide

Died: 7 May 2007, Adelaide

John Perry came from what he described as a “modest background”, attending a local primary school in Adelaide’s inner southwest and Adelaide Boy’s High School before studying law and violin at the University of Adelaide. He was the son of immigrants – a Greek Cypriot father, Yannis Gabriel Pieris, and a Liverpoolian mother, Mildred Harwood. For his children’s sake his father changed his name to Perry, something John in his later years regretted.

As a five-year-old boy he was drawn to playing the violin, continuing to tertiary level under Lloyd Davies at the Elder Conservatorium. There he also met and performed with Jennifer Mary Goode, a student pianist whom he married in 1958. His mother had encouraged him to study law and, after graduating in 1958, he became a very successful lawyer, counsel and later judge. Musical interests, however, nourished him throughout his life. As a student he led the Elder Conservatorium Orchestra and played in the Adelaide Symphony Orchestra. He later led the Burnside Orchestra.

In 1957 he joined the legal firm that became Kelly & Co, becoming a full partner in 1963 and finally Managing Partner. There he nurtured South Australia’s current Chief Justice John Doyle AC as his articled clerk. John joined Bar Chambers, Adelaide’s first independent barristers’ chambers, upon his appointment as Queens Counsel. He continued as a barrister until his appointment to the Supreme Court in March 1988.

Applying a strong sense of fairness towards people of widely varying ethnic backgrounds, John encouraged them to see themselves as part of, not separate, from the Australian community. In 1999 he joined Amnesty International and further developed his interest in human rights law. He was a Foundation Member of the Council of Civil Liberties and an active member of the Multicultural Forum of South Australia for over 10 years.

John had a strong sense of duty as a lawyer, judge and citizen. In addition to presiding over about 2,000 cases in the Court, he sat on many tribunals and councils. He was a member of the Council of the Law Society of SA during 1971-1985, its President in 1984-85.

He was also Chair of the Commonwealth Committee on Discrimination in Employment and Occupation, and was responsible for the establishment of the Legal Practitioners Education and Admissions Council of South Australia. He participated in the onerous task of drafting uniform legal admission rules for Australia in order to address the problems raised by the differences in the rules of the various states and territories. His membership of other bodies included the Legal Services Commission and the Law Reform Committee of South Australia. One of his last tasks was to chair the State Electoral Boundaries Commission. His report was ground-breaking in various respects which he considered were vital to maintaining confidence in the democratic process.

He was passionate about the value of education and, in particular, an advocate for the importance of ensuring that students had access to tertiary education irrespective of their ethnic or economic backgrounds.

His very active membership of the University’s Law Faculty led to his election to the University Council for eight years from 1997, and the External Advisory Board of the Elder Conservatorium.

On Australia Day 2007 John became an Officer of the Order of Australia (AO). When he retired on 2 April 2007 he had been the longest serving Judge (19 years) on the then Supreme Court bench, the last period being as Senior Puisne Judge of the Court.

John Perry gave hugely to his community. He is survived by his wife, Melissa, two daughters-in-law and five grandchildren.

Contributed by Philip Faragher, a friend of John Perry’s for nearly 50 years
University of Adelaide student Steven Langsford added a modern beat to an ancient text entitled *The Way of the Scholar* to create the cultural performance that helped him win a recent national competition for students of Chinese in Perth.

The more than 30 contestants in the National China Bridge (Hanyu Qiao) competition also had to make a three-minute presentation on an Olympic theme and take a multiple-choice quiz covering everything from history to the environment – both in Chinese.

Steven won the overall first prize while another University of Adelaide student, Jane Thompson, won the award for best general knowledge. The competition is organised in conjunction with the Chinese Embassy in Australia.

“We each had to give a cultural performance so I thought I would try something different,” said Steven, who finished in the top five in the competition in 2005.

“The rap worked because the text was quite repetitive and also cut back to the basics in its message and meaning.”

Steven’s presentation linked striving in sport to striving in study and even compared some modern Chinese celebrities to the ancient Greek myths. Jane sang a Taiwanese song and spoke about the Olympic mascots, describing it as a “challenging but enjoyable” experience.

Both have studied in China, which has helped fuel a love for the language and the culture. Jane spent a month in China after winning an Australia China Council scholarship while a Year 10 student at Loreto College, and hopes her Arts / Law degree can lead to a career in diplomacy or international relations – focussing on China, of course.

Steven spent a gap year in Beijing after graduating from Unley High School then won a scholarship to study for a year at a language centre in Taiwan as part of his BA at the University.

He is majoring in Chinese and Psychology, and the two came together when he helped a Psychology lecturer with a study on grammar processing during his summer break. “Chinese goes with everything,” he said.

The Pro Vice-Chancellor (International), Professor John Taplin, applauded the achievements of the students, saying it showed the strength of the University’s Chinese language program taught by the Centre for Asian Studies and the importance of the new Confucius Institute.

Next year’s National China Bridge Competition will be held in Adelaide and hosted by the Confucius Institute at the University of Adelaide.
Classic recital at Urrbrae House

Music

Award-winning classical guitarist and Elder Conservatorium PhD candidate Aleksandr Tsiboulski will give a solo recital at Urrbrae House on Wednesday 11 July.

The 27-year-old musician and Fulbright Scholar, who has won five international guitar competitions in the past 18 months, will demonstrate his exceptional talent in an early evening performance at 6pm.

It will be a special occasion for the Ukraine-born musician, who gave his first public performance as a 15-year-old at Urrbrae House, 11 years ago.

“Because of its size and acoustic, the Drawing Room at Urrbrae House is one of the loveliest venues in which to play the classical guitar,” he said.

The last 12 months have been sensational for Alex, who took out first prize at the 49th Tokyo International Guitar Competition last December, one of the most prestigious in the world. Alex also won the San Antonio and Dallas International Guitar Competitions in February and March 2007, respectively.

A Fulbright Scholar in the Visual and Performing Arts, Alex is currently on study leave and based at the University of Texas in Austin, where he is pursuing graduate study in music under the guidance of Adam Holzman.

He is also preparing for a Yamaha-sponsored tour of Japan this year, courtesy of his competition win in 2006.

Alex took up the guitar at the age of 12, shortly after moving from the Ukraine to Adelaide. He attended Marryatville High School, well known for its music program, and the Australian National University where he studied with renowned Australian guitarist and teacher Timothy Kain.

In the past decade Alex has performed all around Australia, as well as Great Britain, the United States, the former Soviet Union, Mexico, Costa Rica, Cuba, Ireland, Canada and Japan.

The July recital is being organised by the Friends of the Waite Arboretum. Alex will perform works by the distinguished Mexican composer Manuel Ponce, Cuban composer Leo Brouwer and well known South Australian composer Graeme Koehne.

Bookings are recommended as seating for the $15 event is limited. To book, contact Jennifer Garner on 8303 7405.

Story by Candy Gibson