Finding the turn-off factor for rural GPs

Dr. Somers surveyed first, second and fourth-year medical students. “Intention to work in a rural area fluctuates throughout the students’ medical course, but it seems that rural placements are an important factor in the decision-making process towards undertaking a rural career,” he said.

“This would support the current trend towards making longer rural attachments available for undergraduates. However, few positive experiences increase rural intention, negative rural placements can be equally powerful in turning the student against a rural career. Feeling unwilling students to do rural rotations may be counter-productive.”

Dr. Somers has worked as a GP in Emerald, on the outskirts of metropolitan Melbourne, for the past 20 years. Although this area is considered rural, he has had trouble attracting doctors to work in his practice. “The rural medical shortage has existed for some time but there is another aspect to this issue,” he said. “The vast majority of rural doctors are general practitioners but fewer medical students want to be GPs. Rather, they are choosing to specialize, which requires only one extra year of study.”

Dr. Somers’ survey of 127 first-year medical students found that the major issues turning them away from a rural career related to lack of income, limited access to community facilities, healthcare and childcare, and restricted professional opportunities for spouses or partners.

Dr. Somers said a rotation with a rural GP might help students address these concerns. “This belief was supported by his survey of fourth-year medical students, undertaken before they began their training to be specialists or GPs, which revealed that 70 per cent said they wanted to spend some time practicing in the country after they completed their degree.”

“Enough concern me is that this percentage does not translate into real figures,” Dr. Somers said.

He said it was possible that what changed the students’ intention was the extra year or two of postgraduate training that they spent with specialist mentors in non-rural settings.

“It appears that, whether intentionally or not, these specialist mentors are dissuading students from practising in the country.” — Penny Fanning

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Snare secrets: Dr James Whisstock and his colleagues in the Department of Biochemistry and Molecular Biology have found a group of proteins called serpins in heart-attack bacteria. By understanding these serpins, new treatments for diseases such as emphysema, liver cirrhosis, certain dementias and thrombosis could be possible. See page 3 for details.

NEWS

More hours worked to pay off study debt.

University students are working longer hours than they were in 1984, a Monash survey has found.

Therapy best way to treat teenage depression

Depressed teenagers respond faster to cognitive behavioural therapy than to anti-depressant medication, according to a groundbreaking study.

A challenge to the supermarket giants

The international supermarket chain, Aldi, is now in Australia and grocery shopping in this country may never be the same again.

Monash’s current pro vice-chancellor, Professor Patricia Larkins, has been appointed as the university’s new vice-chancellor. Professor Parker’s appointment is effective immediately, while Professor Larkins, who is currently dean of Medicine at the University of Melbourne, will take up her position in September.

In another senior appointment, Professor Stephen Parker, has been appointed a deputy vice-chancellor at the university. The University Council has confirmed that Professor Parker will be a deputy to Professor Richard Larkins, who was appointed in March as the university’s new vice-chancellor.

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Changes to the senior leadership

APPOINTMENTS

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**Echos of the Italian Renaissance**

**HISTORY**

The director of the Monash University Centre in Florence, Professor Bill Kent, has taken over as the editorial director of a major international publication on 19 volumes of letters by the famous Italian Renaissance philosopher Lorenzo de’ Medici.

Professor Kent’s job will be made easier by his ability to access a lifetime collection of academic papers from the estate of one of the 20th century’s most eminent Italian Renaissance history scholars.

**INTERNATIONAL**

Monash College’s ‘Monash Experience’ course to be introduced at Monash University’s Centre for Ambulance and Paramedic Studies, based in the Faculty of Health Sciences, said Professor Kent last year at the age of 91 after completing nine volumes of the letters. Left behind 43 boxes of working papers on Renaissance Florence under the Medici.

This rich source of reference material was presented recently to the Prato centre via Professor Kent, whose association with Professor Rubinstein goes back to the 1960s. "I first met him in London in 1967 when his reputation was being established as the greatest scholar of his generation on Renaissance Florence," Professor Kent said. "He was the last of the great giant Jewish scholars, and during his 50-year career as history lecturer, student and professor at London University he inspired generations of younger scholars, including myself.

"I am an honour and a delight to accept the offer from the executor of Professor Rubinstein to earn to bear his academic papers. The collection includes correspondence and papers of a duration going back more than 50 years, and it was a very moving experience to imagine some of them."

Professor Kent said the papers would be a great incentive for scholars of Renaissance Florence later and that he would commit them entirely while his tenure as the volume of Lorenzo de’ Medici letters.

International collaborators on the letters project include London University’s Warburg Institute, Harvard University, the Monash Centre for Italian Renaissance Studies in Florence and the Renaissance Society of America.

- Michele Martin

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**College directors get the ‘Monash Experience’**

**NEWS**

**IN BRIEF**

New engineering course at Gippsland

A new undergraduate engineering course to be introduced at Monash University’s Gippsland campus next year will add six new courses.

The Bachelor of Civil and Environmental Engineering degree will be accredited by the School of Applied Sciences.

School head Professor Sam Addo said the course would not only cover the “nuts and bolts” of engineering, but also focus on topics relevant to the local community such as water resource management and site quality.

The course would be launched in a joint industry and the local community is crucial to the success of the program, which has the potential to attract local students as well as student from elsewhere in Victoria, from other states and overseas, he added.

$250,000 research grant

Monash University researchers have been awarded $250,000 from the Federal Government to aid their development of an anti-inflammatory drug with the potential to help millions of people.

Associate Professor Lea Morand, from the Department of Medicine at the Southern Clinical School at Monash University’s Medical Centre, and Dr Magaly Iskander, from Monash’s Department of Medical Chemistry, the Victorian College of Pharmacy, have established a company to commercialise their research.

Dr Morand said the new drug, which will be developed through Corical-Pty-Ltd, could benefit the millions around the world who suffer from rheumatoid arthritis and osteoarthritis.

**Teaching excellence rewarded**

The director of Monash’s Australian Centre for the Study of Jewish Civilisation, Professor Andrew Markus, has received the Faculty of Arts 2003 Excellence in Teaching Award.

The award was made by deputy chancellor Mr Paul Ramler at a recent graduation ceremony, recommended by Professor Markus has achieved since 1998 in guiding its PhD students and four masters students to successful completion of their studies.

The Australian Centre for the Study of Jewish Civilisation was established in 1992 within the School of Historical Studies. Professor Markus was appointed the first full-time director of the centre in 2001.

**European research opportunities**

Monash researchers can now take advantage of significant funding opportunities for collaborative projects in the UK and Europe.

One of the major funding sources is the Fifth Framework Programme (FP5), launched last November.

FP6 is the European Union’s main source of funding for research in Europe up to 2006, with an overall budget of 17.5 billion Euros.

Australian researchers are able to access a variety of her research centres and European companies and research institutions.

**Vice-chancellor’s debate tackles security**

The ninth annual Vice-Chancellor’s Debate, organised by the Monash University Association of Debaters, considered the motion ‘that Australia has forfeited its freedom for security’.

The topic was chosen in the past year to include London University’s Warburg Institute, Harvard University, and the Victorian College of Pharmacy, has established a company to commercialise their research.

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Students working harder to pay for studies

EDUCATION
University students are working three times as many hours to pay off their loans as they did in 1984, a survey by the Monash Centre for the Economics of Education and Training (CEET) has found.

The study, "Paying their way: results from a survey of Australian university students," sponsored by the Australian Vice-Chancellors Committee and financed by CEET in the Faculty of Education at Monash, and Professor Martin Hayden, from Southern Cross University, found that 72 per cent of full-time students working during semester — an increase of about one-half since 1984. At least 3 per cent of full-time students worked in full-time employment.

Mr Long said full-time students averaged an average of 14.5 hours a week, a three-fold increase since 1984. And that one in 10 students took out a loan amount was $4000.

One in 10 students frequently missed classes because of their work, and two in every 10 students reported that their marks were adversely affected by work "a great deal."

The research also found that one in 10 students missed classes sometimes or frequently because they could not afford to study. "One in every 10 students trudged to a national estimate of about 80,000 Australian university students missing classes," Mr Long said. "This study shows that being a university student in Australia is tough financially speaking."

"Overall the survey provides strong evidence supporting concerns that the financial circumstances of undergraduate students are having a substantial impact on their studies, so much so that they are not always gaining optimum value from their enrolment."

- Diane Squires

Designing drugs to beat diabetes

PHARMACOLOGY
A drug that could prevent or delay the complications experienced by Type I and Type II diabetes sufferers is being tested for its effectiveness by Monash University researcher Dr Ossama El-Kabbani.

His research group has been examining how the drug binds to an enzyme called aldose reductase, which converts glucose into a sugar alcohol called sorbitol. In people with diabetes, the breakdown of glucose by aldose reductase leads to high sorbitol levels.

"Sorbitol is thought to damage cells and, after about 15 years, can lead to diabetic complications such as retinopathy (eye disease), nephropathy (kidney disease) and neuropathy (nerve disease)," said Dr El-Kabbani, a senior lecturer in the Department of Medicinal Chemistry.

To prevent glucose being converted into sorbitol, the aldose reductase enzyme must be prevented from binding to glucose. There are no aldose reductase inhibitors on the market in Australia or the US but there is one — called fidarestat — in phase three clinical trials in Japan.

Dr El-Kabbani, in collaboration with Professor Alberto Podjarny of the French National Scientific Research Centre, has begun using sorbitol instead of glucose in the US, France and Switzerland to test how effectively fidarestat, a drug developed by the Sanoz Kagakku Kenkyusho Company in Japan, binds to aldose reductase. Construction of Australia's first sorbitol reductase is to begin at Monash later this year.

"By using sorbitol light, we can gain an understanding of the drug's mechanism of action," Dr El-Kabbani said. "If we know how it works and how it is binding to its target, we can modify the drug and make it more specific."

Dr El-Kabbani's research team is one of only a few groups worldwide to have used sorbitol reductase light to view one protein structures down to the level of individual hydrogen atoms. "By using this method, we can actually see some of the chemical reactions that are taking place as the drug binds," he said.

Dr El-Kabbani will present the results of this sorbitol reductase research in July in the US, where he will give a keynote address at the American Crystallographic Association meeting.

The research has been funded by Diabetes Australia, the Australian Kidney Foundation, the Australian Research Council and the National Health and Medical Research Council.

- Penny Fannin

Unfolding the serpin mystery

The discovery by Monash University researchers of a group of proteins in bacteria called "serpins" has exposed a new mechanism for preventing a range of human diseases.

Using X-ray crystallography and synchrotron radiation at the Advanced Photon Source in Chicago, a team led by Dr James Whistock, a research fellow at Monash and director of the Victorian Bioinformatics Centrum (VBC), has solved the structure of a bacterial serpin.

This new mechanism was published in the international journal Structural Biology in April and was the first to be revealed by X-ray fine crystallography in collaboration with the Proten Crystallography Unit at Monash.

When human serpins are exposed to high temperatures, their "holographic" folding process is disrupted, and they can also form inactive clumps. But the bacterial serpins identified by the team of Dr Whistock, Dr James Whisstock, Ms Lisa Cabrita, Dr Janice Boissiere, Dr Robert Field and Dr Steve Boothley, all from the Department of Biochemistry and Molecular Biology, is not affected by heat in this way.

"The serpin, found in a bacterium called "serpin," is a small iron, Fe, protein that is coated with high temperatures of around 55 degrees Celsius, are able to withstand treatment and is used to deactivates for the treatment of diabetes."

"When serpins in humans are exposed to high temperatures, they unfold and aggregate, leading to the development of disease. For example, the human prolactin C_4 is involved in the development of bones, and the serpin B_3, which is released from the bone, helps to protect the bone from degradation."

To ignore them and not protect them would have a major impact."

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BIOLOGICAL SCIENCE
Endangered Red-tailed Black Cockatoos could disappear from western Victoria, unless steps are taken to preserve the Buloke woodlands where they feed in summer, according to Monash University researchers.

There are estimated to be fewer than 1000 south-eastern Red-tailed Black Cockatoos remaining in Australia, and land clearance has reduced the woodlands of Buloke trees by 98 per cent.

"Endangered Black Cockatoos are very picky eaters — they feed only on the seeds of two types of stringybark and, in the summer months, the seeds of Buloke."

Ms Maron's research has revealed that the cockatoos prefer to feed in Buloke trees that produce large seeds, as well as those small seeds. "We thought we might be able to identify the trees that were the most important to protect for the cockatoos, but it's not that simple because each year different trees seem to produce the best quality food," she said.

"This makes the conservation issue even more difficult, because we have to try to preserve everything that's left. Much of the Buloke woodland that remains consists of scattered trees on property boundaries. In this area poses a particular problem in trying to protect the cockatoos."

The research was financially supported by Birds Australia Victorian branch, the Holsworth Wildlife Research Fund and the Stuart Leeder Bird Research Award.

- Penny Fannin

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Trees the key to saving woodland birds

In light of recent studies that show an alarming decline in woodland bird populations across southern Australia, Ms Maron is now studying other birds that live in the Buloke woodlands to find out how important the habitat is to them.

"Fourteen bird species thought to be in decline in southern Australia still occur in small patches of Buloke down to 2.5 hectares in size," Ms Maron said. "These patches are pretty degraded — sometimes with no understorey at all — yet species such as Brown Treecreepers and Hooded Robins are common."

"It appears that in Victoria, Buloke woodlands, these birds don't rely on corridors for dispersal — nor do they seem to require large areas of intact vegetation to survive."

One reason why so many smaller bird species persist in these remnant woodlands may be the absence of the Noisy Miner — an aggressive native honeyeater known to exclude smaller birds from other woodland remnants. "These small patches of Buloke are obviously highly important to the conservation of these woodland birds. To ignore them and not protect them would have a great impact."

- Penny Fannin

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New hope for diabetes sufferers

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Birdwatching: Ms Martine Marin and the Buloke woodlands, below, that are the habitat for the disappearing Red-tailed Black Cockatoo.

Disappearing: The Red-tailed Black Cockatoos.

CONTACT:

UNIVERSITY RESEARCH CENTRE FOR ECONOMICS OF EDUCATION AND TRAINING
New Monash research focuses on ecotourism

**MANAGEMENT**

A thesis on tourist guiding in Australia's ecotourism industry has excited Rosemary Black, the distinction of being the first PhD student to graduate from Monash University's Berwick campus.

Dr Black's thesis, Towards a model for tourist guide certification: an analysis of the Australian Ecotour Guide Program, proposes a general model for tourist guide certification in the industry, with the aim of improving the overall quality of the ecotourism experience.

"The natural beauty of Australia attracts millions of tourists each year, but the quality of their experience relies heavily on the calibre of their ecotour guide," she said. "With no certification system, the experience can vary widely."

Dr Black's work directly contributed to the development of a National Nature and Ecotour Guide Certification Program. Her PhD research, undertaken in the Department of Management in the Faculty of Business and Economics, improved the certification program as it evolved and provided valuable feedback to the program manager for its use in long-term strategies.

Dr Black also tracked ecotour guides through the certification process and responded to their feedback, while working on issues such as how to achieve best practice in guide certification.

**Depression gets a lift**

A total of seven Monash research projects examining different aspects of depression will benefit from grants totalling more than $908,000 awarded by the Victorian Centre of Excellence in Depression.

The centre is a collaborative project between Victoria's Department of Human Services and Beyondhol, the national depression initiative.

The major beneficiaries were programmes examining psychological treatments for teenagers with depression, headed by Professor Bruce Tonge ($369,628), and the use of internet-based treatment for panic disorder in general medical practice, headed by Professor Jeff Richards ($364,000).

Other grants involving Monash University academics and researchers were:

- An interdiciplinary approach to recognizing and treating depression among older Australians in residential care – $75,000.
- Finding out what experienced GPs mean by "depression"; towards a meaningful taxonomy of depression in primary care – $50,000.
- Depression in farmers and farming families – $50,000.
- National study into the management of depression in general practice extension and follow-up – $48,983.
- ‘Diagnosis and treatment of depression and panic disorder in individuals with intellectual disability through GP and psychiatric collaboration’ – $43,580.

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**SCHOOLS**

**Explore Monash**

The next school holiday campus visit program for regional and interstate students will be held on 4 July at Monash Clayton campus.

The program provides an excellent opportunity for prospective students and their families to visit the campus during the holiday period and take a tour of the campus with current students. Participants may also enrol in another Monash campus later in the term.

For more information and to book, online, visit www.monash.edu.au/psto/explots.html.

**Chemical Engineering Experience**

This annual program offers Year 10 to 12 students interested in careers in science, chemistry and engineering the chance to tour various chemical engineering facilities.

Due to overwhelming demand for this year's program, to be held on 1 and 2 July, a second program is now being offered on Tuesday 8 and Wednesday 9 July. Places are strictly limited, so book early to avoid disappointment.

The program will run from 9 am to 4 pm in the Department of Chemical Engineering at Clayton campus. Morning tea and lunch will be provided each day.

There is a registration fee for participants.

For further information and bookings, contact Dr Michael Hartnett, 0402 187 851 or email Dr.Hartnett@eng.monash.edu.au.

New Monash courses 2004 – applications through VTAC

Bachelor of Information Technology, Gippsland

Students can choose from three majors, including:

- system development – analysis of computer-based information systems and applications;
- business technology – the use and development of information technologies for industry, business and government;
- business systems – solving complex problems in business with computers and information systems.

For information, contact +61 3 9905 8355 or email gippsland@monash.edu.au.

Bachelor of Multimedia and Interactivity

The course focuses on multimedia and digital interactive technologies with four options:

- applications – the application of these technologies;
- programming – systems development via programming;
- enterprise – electronic commerce and interactive technologies;
- game development – game creation and coding technologies.

For information, contact +61 3 9904 7900, email multimedia@infotech.monash.edu.au or visit www.multimedia.monash.edu.au.

**The best way to treat teenage depression**

**PSYCHOLOGY**

Depressed teenagers respond faster to cognitive behavioural therapy than to anti-depressant medication, according to a groundbreaking Monash University study.

The results of the study – Time for a change: effective treatment of depressed youth in urban and rural primary care settings – surprised the researchers, who were expecting a combined treatment of cognitive behavioural therapy and antidepressant medication to be superior.

The community-based adolescent depression treatment program studied 73 teenagers aged between 12 and 18. They were divided into three groups.

One group received cognitive behavioural treatment during the course of the study, another was given a medicine anti-depressant medication, and the third a combination of the two treatments.

The program involved three clinics, covering the Melbourne regions of Frankston and Dandenong and the city and inner areas of Geelong.

The cognitive behavioural therapy took the form of a 12-session program for the adolescents and their parents or carers. The teenagers were taught helpful ways of thinking and reacting to situations, relaxation techniques and social skills. They were also encouraged to become involved in more activities.

The second group received the anti-depressant medication and underwent cognitive behavioural therapy.

"We expected the combined treatment would be superior, but we found the cognitive behavioural therapy alone led to a more rapid treatment response," said study coordinator and psychologist Dr Glenn Mathews from Monash's Centre for Developmental Psychiatry and Psychology.

"After three months, there was more rapid improvement in depression in the cognitive behavioural therapy group. However, after six months, all three methods were found to be equally effective."

The study is set to continue for another three years, with the aid of a $369,628 grant from the Victorian Centre of Excellence in Depression. Researchers will be able to gather a further sample of teenagers and measure how best to manage the 20 to 30 per cent of teenagers who don't respond to any form of treatment.

- Allison Harding

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A challenge to the supermarket giants

The international supermarket chain Aldi is now in Australia and grocery shopping in this country may never be the same again, according to the new director of the Australian Centre for Retail Studies at Monash University, Ms Amanda Young.

The presence of the two new Melbourne outlets will allow shoppers to compare the way they currently shop with the Aldi experience. Will they decide they like the no-frills approach, and therefore switch their buying loyalty from Coles and Safeway? Aldi promises to provide real competition for the Coles and Safeway duopoly that currently dominates with 80 per cent of the national market share. The shake-up will make consumers re-evaluate the real supermarket buying experience, whereas Aldi operaters, customers will switch to - and a significant percentage will stay with - Aldi.

But what is Aldi, and how is it different from other supermarkets?

Aldi is a private, family-owned business with a network of more than 4000 stores in Europe, the UK, the United States and Australia. It opened its first store in 1946 in the German town of Essen. The company grew strongly and, during the 1960s, the self-service concept was developed and adapted to its no-frills philosophy.

Today, the company operates as two separate groups - Aldi North, which covers the northern region of Germany, Belgium, Denmark, France, Luxembourg and the Netherlands, and Aldi South, which operates in southern Germany, Austria, the UK, Ireland, the United States and Australia. In January 2001, the first Australian Aldi store opened in New South Wales. Aldi Australia has its headquarters in the Sydney suburb of Baulkham Hills, from where it is rolling out a nationwide expansion program.

Aldi is different because it looks different, and acts differently, from other supermarkets. An Aldi supermarket looks more like a warehouse, with pallets of goods stacked in aisles rather than shelves. Thundering trucks deliver stock. Customers are encouraged to use available cardboard boxes or their own shopping bags. They pack their own purchases. Aldi stores are cheap, the goods on sale are always first quality. Aldi contracts leading manufacturers to produce products that are then labelled generically for sale. Significantly, local manufacturers make up about 20 per cent of the goods manufactured for Aldi. Consistency is important to the chain. Every store in a state or country has exactly the same prices, no matter what suburb they are in. Aldi stores use very small numbers of staff, and those people are multi-skilled. The store manager also manages the cash register. The stores have limited phone numbers so staff are not distracted from serving. Plastic shopping bags are not free, and customers are encouraged to use available cardboard boxes or their own shopping bags. They pack their own purchases. Aldi offers also have limited price numbers, and their executions do not speak to the media. The company rarely advertises and is not interested in social networking. The company says its customers are the 'silent retailers' - as they compare the prices of the goods they buy with those of other outlets, and they buy the products they want, no matter what the price.

There is a second group of consumers who are price-sensitive and have a high disposable income and they buy the products they want, no matter what the price.

Some shoppers are very loyal to brand and are swayed by image and advertising. People usually have a high disposable income and they buy the products they want, no matter what the price. For these people, price is primary. They don't have much, if any, brand loyalty and they don't care about image. Aldi appeals to this group.

Note that the shake-up and the existing Aldi supermarket is due to its no-frills approach, and therefore switch their buying loyalty from Coles and Safeway? Aldi promises to provide real competition for the Coles and Safeway duopoly - the opening in Melbourne recently signaled a challenge to the supermarket giants.

Ms Amanda Young has more than two decades of experience with Aldi in a number of countries and holds a masters in management at Monash's Caulfield campus. The ACRS is part of the Department of Marketing, within the Faculty of Business and Economics.

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Word in the ear could reap rich rewards

A chance remark from world-famous inventor James Dyson could lead to great things for a Monash art and design graduate.

Mr Nick Tozer's fold-away cafe took out the gold award that bears the Dyson name at the recent Dyson Award ceremony in Melbourne.

"When I went up to collect my award, Mr Dyson mentioned he could put me in touch with a company that would be interested in developing my idea," said Mr Tozer, who graduated in industrial design last November.

"There's been a lot of interest in my work since the awards ceremony. Several firms have expressed interest in the fold-away cafe, and others have offered me the chance to design new furniture."

His award-winning design addresses the problem of cafe owners and staff having to move heavy furniture outside at opening time each day and back inside at closing time. "I worked as a waiter while studying for my degree and realised there was a need for lighter, more portable furniture. Eventually I came up with the idea of the fold-away system," Mr Tozer said.

The table and umbrella can be packed away into a neat ball, while the lightweight chairs are easily stacked. The chairs are made of weatherproof polyurethane, which provides cushioning and means anyone else could win this prestigious award in future years," Mr Coxon said. "It's part of the Art and Design faculty's philosophy to encourage our students to enter contests both in Australia and overseas."

Monash industrial design students have won the Dyson Award three years running since its inception in 2003. Honours student Mr Dileasoura Sceats won the inaugural award with 'Skippe', a three-wheeled, eco-friendly motorcycle. Last year, Mr Paul Manczak took out the gold award with 'Goldiloy', a lightweight, self-rescue craft.

"All our students are encouraged to enter the competition and we have no intention of letting any other student win," Mr Coxon said.

The table and umbrella concept ensures our students have a chance to develop their design and deals with related intellectual property issues." -- Richard Swart


The power of cinematic language is also strongly expressed in the works of Tony Lloyd, who uses the widescreen format in a series of monochromatic, nocturnal images and Kare Steverson, who was manipulated, related shots from the same viewpoint to conjure moments in time.


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**Recreating beauty in the ancient beast**

A dinosaur discovered late last century in the Transantarctic Mountains in Antarctica was recently reconstructed at Monash University by a team of specialist technicians.

*Cryptosaurus*, or crested reptile, will have a starring role in *Dinosaurs of Darkness*, a major exhibition being held in Japan from July 7 to September 20, to which the Monash Science Centre at Clayton is contributing one of the world's best construction projects. The exhibition is being held in conjunction with the Japan Science Centre at Gayton and was completed late last month and will go on being displayed and shipped in sections.

**Working with dinosaurs.** From left Mr Raul Vacca, Museo Paleontologico Egidio Feruglio, Argentina; Mr Dave Pickering, Museum Victoria; Professor James Col, head, School of Geosciences; and (back) Mr Chris Pierson, workshop manager, School of Geosciences. (Photo: Peter Ankljence)

The reconstruction process began with a detailed description of *Cryptosaurus* by artist Peter Trusler. The team then worked to transform the dinosaur’s bones and making sure the tools and machinery were used correctly. The process normally takes at least eight weeks with a four-person team. Mr Pierson said, “Although the process normally takes at least eight weeks with a four-person team, the project was completed in six weeks with a team of three.”

Beginning with the sections (hip area), which was mounted on a frame at about the right height, the team then added the tail section, ribs, arms, neck and head before finally attaching the ribs were assembled. The arm assemblies were the last to be constructed. Mr Pierson, a former-trader by trade and with a background in engineering, had the task of constructing the inner framework to support the bones and making sure the tools and machinery were used correctly. “My prime concern was to construct a steel framework for the bones to enable it to be free-standing without any external support. The idea is that the observer sees only the skeleton and not the inner framework. This requires consideration of material thickness, type and structure, so the dinosaur doesn’t collapse when finished,” Mr Pierson said.

“‘The material used for the construction was shaped through heating, cutting, welding, bending, bracing, framing, nailing and milling on the specialist pieces of equipment housed in the workshop. Glass such as araldite and plastibond, as well as fibreglass resin and urethane foam, were also relied upon.”

Mr Pickering had the task of carefully sculpting and fitting the hand-and-feet sections so they would articulate smoothly and correctly with the artist’s original drawings. This time-intensive process was not unlike Mr Pickering’s role at Monash University and Museum Victoria, where he works as a preparator, carefully extracting fossils out of rocks found at the Flinders Rocks site at Inverloch, Victoria (a Monash project supported by an Australian Research Council grant).

Monash Science Centre director Professor Vickers-Rich, who oversaw the reconstruction project, was delighted with the result. “The project is an excellent example of the extent of international cooperation between Monash and other major institutions around the world and highlights the diverse skills of people working at this university,” Professor Vickers-Rich said.

The final stage involved painting the completed skeleton and turning it into a museum showcase. The task was entrusted to Year 10 student Dr Hau is a lecturer in the School of Historical Studies at Monash University.

**Economic Development and Division of Labor**

By Xiaokai Yang
Published by Blackwell Publishing
RRP: S88

This book introduces developmental economics through the lens of infra-marginal and marginal analysis and shows how this way of thinking has influenced a shift back to classical economic theory within the field of economic development. This book introduces developmental economics through the lens of infra-marginal and marginal analysis and shows how this way of thinking has influenced a shift back to classical economic theory within the field of economic development. The book also examines the impact of such reforms on German society and medicine.

**The Cult of Health and Beauty in Germany: A Social History**

By Michael Hau
Published by University of Chicago Press
RRP: S48

From the 19th to the 20th, a growing number of Germans began scrutinising and disciplinary practices in a quest for perfect health and beauty. In this book, Dr Michael Hau looks at the transformation of universities through a series of case studies. The book was published by Arena (RRP S57-56), which has interest in those concerned about social change.

If you are a member of the Monash community and have a forthcoming book, contact monashnews@adm.monash.edu.au.
**Transporter may aid disabled**

**ENGINEERING**

The Monash Rehabilitation Technology Research Unit (REHAB Tech) is planning to commence full-scale trials with a battery-driven, two-wheeled 'human transporter' which they believe could revolutionise the lives of many people with disabilities.

The device, developed in the US and known as the Segway, is self-balancing and has no accelerator or brakes. If the rider stands forward or back, it moves forward or back; if the rider stands up straight, it stops.

To maintain balance, the device uses solid-state gyroscopes, tilt sensors, high-speed microprocessors and powerful electric motors.

"A whole range of people could achieve greater mobility and independence by using the Segway, from those with mild arthritis through to amputees and even muscular dystrophy sufferers," said REHAB Tech manager Mr Bill Contoyannis.

The unit is part of the Centre for Biomedical Engineering and Translational Medicine at Monash University. Based at the Caulfield General Medical Centre, REHAB Tech develops and assesses a range of new technologies in the field of rehabilitative engineering.

Mr Contoyannis said REHAB Tech already had the facilities to test the Segway.

"An automated overhead harness-tracking system, which we developed to aid patients who are learning to walk again, would allow us to test the Segway in a safe manner," he said.

REHAB Tech would also be able to offer an environment where people with disabilities could trial the Segway.

"We want people to be able to make an informed decision about buying one, without putting the onus on the sellers or the disability agencies," he said.

Further medical device engineer Mr Roy Bartlett, who lost his left leg after an industrial accident in 1996, said the Segway could change his life. After trialling one loaned to REHAB Tech, he is now prepared to buy one for his own use and make it available for on-going assessments.

"When my right (prosthetic) leg eventually gives out, I will be confined to a wheelchair. If I use the Segway, I will be more mobile and for longer. My doctors are very keen on the idea," he added.

Under the strict trial conditions, Mr Bartlett found that with the support afforded by the overhead harness and the Segway's inherent stability, his learning curve was very steep.

Currently unavaiilable outside the United States, the sample device has been brought into Australia by Melbourne-based businessman Mr Mine Mone, who gave a detailed demonstration to REHAB Tech staff.

It's an elegant product which is easy to use. It can stand still, remain stable and turn on a five-cent piece. I believe it could make a real difference to people with mobility issues," Mr Mone said.

REHAB Tech is seeking funding to purchase a full size Segway for use in extended trials. A single unit costs around A$18 000.

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**Privatisation: study looks at its links to corruption**

Monash University Malaysia is joining forces with Transparency International to investigate the likely impact of privatisation on five of the 10 countries in the Association of South-East Asian Nations (ASEAN).

Singapore, Thailand, Indonesia, the Philippines and Malaysia have been chosen for the study, as they are similar in terms of their socio-economic environment.

Professor Bala Shammugam, chairman, accountant and former vice-chancellor at Monash Malaysia, will supervise the study, which will focus on trying to establish whether there is a link between privatisation and corruption.

"There have been widespread accusations in many countries, especially in the ASEAN countries, that privatisation procedures are corrupt," he said.

Transparency International Malaysia President Tunku Abdul Aziz Ibrahim said no one could deny the material benefits of privatisation if it was implemented with the people's interests in mind.

"Unfortunately, we have seen far too many cases of what the former British prime minister Margaret Thatcher once referred to us 'the family silver' being given away with abandon to the well-connected few against the interests of the many," he said.

Tunku Abdul said he hoped the study's practical recommendations would lead to practical recommendations in dealing with privatisation projects to ensure the whole process was fair, transparent and conducted on a level playing field.

"This is part of good governance, and ASEAN and Malaysia need to ensure that if privatisation is carried out in an accountable manner, it will bring benefits to all," he added.

The study will examine the costs and potential benefits of privatisation in the five chosen countries and is expected to take 18 months to complete, with the findings being made available to the end of next year.

After signing a Memorandum of Understanding with Transparency International Malaysia, Professor Robert Bignall said the joint initiative would provide a firm basis and open up exciting opportunities for both institutions to work together on a wide range of internationally beneficial research projects in the future.

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**Evolution of digital TV not going to plan**

The Federal Government's strategic plan for digital broadcasting services in Australia need to be urgently reviewed, according to a Monash researcher.

Mr Care Dowd, who has been investigating digitisation as part of his research masters in information management systems, says Australia's free-to-air networks are not currently equipped to broadcast at least 20 hours of high-definition programs each week.

As well, Mr Dowd says, most consumers cannot afford to buy the new technology — either a set-top box or a television set — required for digital reception.

"There is only one integrated digital TV set which meets Australian standards currently available. The cheapest set is selling for a digital set-top box is still an expense that most people are not willing to pay for," Mr Dowd said.

"As yet, digital services are not vastly different from existing services, so there's no real incentive for people to upgrade.

"Digital technology allows individual broadcasters to transmit multiple TV channels, but for only the ABC and SBS have been granted the opportunity to experiment with this format.

"The ABC expanded by broadcasting the free-to-air channels ABC Kids and TV Ten, aimed at a youth market, but the organisation recently announced plans to scrap both channels because of lack of funding.

"The fact that no extra money to fund these services was made available to the ABC in the Federal Budget has prompted some who the broadcaster could be no easier to privatisation by default.

"Without government support, the ABC cannot be guaranteed a place in the digital landscape," Mr Dowd said.

For the commercial channels, digital TV poses a dilemma. Going down the multi-channel road will lead inevitably to audience fragmentation and rate questions about its appeal as an advertising medium.

"In order to tap the benefits of digital TV, the broadcasters need to build large volumes of content, but quantity doesn't equate to diversity," Mr Dowd said.

"This could create a further problem for broadcasters warring with Australian content quota issues that impact on cultural production, overproduction and identity at a community level.

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**Digital TV: The set-top boxes are proving hard to sell.**

Further complicating the digital picture is the prospect of new commercial channels being allowed to enter the market in five years' time when deregulation is complete.

Dowd reckons the commercial and news channels will pay the highest price as they are likely to be left behind.

"We are only talking about a year's worth of channels, and the number of set-top boxes being sold seems to be increasing each week. It is proving hard to sell.

"Option two, which is to experiment with this format.

"In order to tap the benefits of digital TV, the broadcasters need to build large volumes of content, but quantity doesn't equate to diversity," Mr Dowd said.

"This could create a further problem for broadcasters warring with Australian content quota issues that impact on cultural production, overproduction and identity at a community level.

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