



Dinosaurs on display: Monash Science Centre exhibition curator Dr Corrie Williams with just one of the many exhibitions in the new science centre. Photo Greg Ford.

## From fossils to physics at new science centre

The answers to such questions as why bubbles pop, how an ant is changing the ecology of Christmas Island and how the universe might have formed can be found at a revolutionary new science centre at Monash University.

The \$4.2 million Monash Science Centre, developed over 10 years and conceived by Professor Pat Vickers-Rich, was officially opened by Federal Science Minister Peter McGauran at the Clayton campus on 2 July.

Professor Vickers-Rich, who holds a personal chair in palaeontology at

Monash, said the centre was developed to involve primary and secondary school-aged children in science by tapping into their curiosity.

"The centre has been designed to appeal not only to kids but to people of all ages, and partly grew out of my frustration with the simplistic button-pushing, light-flashing theme park approach often encountered in public science facilities worldwide," Professor Vickers-Rich said.

"I felt that kids would often go to a museum or a science centre and would have no contact with scientists

or gain any idea of what is involved in carrying out scientific research. Nor, for that matter, would they learn about how everyone can use ideas and methods of science in their everyday lives."

People visiting the Monash Science Centre can interact with working scientists and science students to gain some hands-on science experience.

Visitors can also carry out their own experiments in chemistry, observe weather patterns or study the physics of movement.

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## Researchers in stem cell breakthrough

In a world first, Monash University researchers have discovered immune system stem cells and used them to grow a crucial part of the immune system – the thymus.

For more than 30 years, a major question in immunology has been how to replace a dysfunctional thymus, a small organ just above the heart that is critical in generating many vital cells of the immune system, including infection-fighting T-cells.

In many people, the thymus does not work properly due to ageing, attack by viruses, chemotherapy or genetic abnormalities. When this happens, the body becomes susceptible to infection and death can result.

Now, Associate Professor Richard Boyd and Dr Jason Gill from the Monash University Medical School have identified a small population of cells that can generate a complete and functional thymus.

Their research was published last month in the international journal *Nature Immunology*.

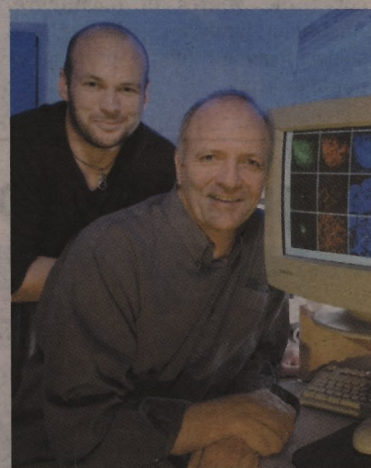
"There are two major parts to the thymus – lymphocytes and the epithelium," Associate Professor Boyd said.

"It has been known for about 30 years that haemopoietic stem cells lead to the lymphocytes but, until now, we have not known which cells lead to the creation of the epithelium."

The thymus epithelium is vital in the immune system because it has the unique ability of converting haemopoietic stem cells to T-cells, Associate Professor Boyd said.

It also controls the ability of T-cells to recognise foreign invaders and assists in stopping T-cells from attacking body tissues. If there is a defect in the thymic epithelium, then there may be a defect in the T-cells and a greater predisposition to disease.

"The discovery of thymic epithelial stem cells is hugely exciting for us



World first: Associate Professor Richard Boyd, right, and Dr Jason Gill have used immune system stem cells to grow a thymus. Photo Greg Ford.

and has taken 15 years of dedicated research," Associate Professor Boyd said.

He said he hoped the research would eventually be used to repair or renew the thymus of people in whom it had been damaged.

"There has been limited success with thymus transplants as they are invariably rejected by the recipient, but now we have the possibility of rebuilding someone's thymus after it has been destroyed," he said.

Another promising application could be to use gene therapy to correct gene mutations that lead to thymus problems.

"It might be possible to take thymic epithelial stem cells from a patient, replace a faulty thymus gene with a good copy of the gene, and put those cells back into the patient where they will grow into a healthy thymus," Associate Professor Boyd said.

Penny Fannin

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# The art of contemplation

Two years ago, every day for more than two months, artist Mary Tonkin would travel to Werribee Gorge in Victoria and spend more than 10 hours sketching the sight that lay before her.

Her aim was to record her intimate experience of the landscape and the sensations she felt while engaging with it.

In an age of instant gratification, such an endeavour might seem anachronistic, but the resulting work, 'Rocky Outcrop, Werribee Gorge' (2000, charcoal and paper), has won Ms Tonkin, both a lecturer and post-graduate student at Monash University, the \$10,000 national Dobell Prize for Drawing.

The prize is hosted annually by the Art Gallery of New South Wales and awarded by the Sir William Dobell Art Foundation to encourage excellence in drawing and draftsmanship.

Now in its 10th year, it is one of Australia's most prestigious art prizes and is awarded simultaneously with the Archibald, Wynne and Sulman prizes. Respectively, these prizes cover the genres of portraiture, Australian landscape painting and subject painting (genre painting or mural project).



**Award-winning: Monash artist Mary Tonkin with her work.** Photo Peter Anikijenko.

Ms Tonkin, who has exhibited widely in Australia and overseas, said she was "surprised and thrilled" to win the award. Her work has been automatically acquired for the Gallery of New South Wales' collection.

A 1996 Monash honours graduate in drawing, Ms Tonkin is currently a lecturer in the university's Department of Fine Arts and a candi-

date in the Masters of Fine Art by research program.

The artist said that up until her masters degree, she had worked primarily with portraiture. 'Rocky Outcrop, Werribee Gorge' was her attempt to capture "the experience of being in a place over an extended period of time" – to "explore the relationship of intimacy to perceptual drawing".

"In our culture, we rarely spend time communing with our environment," she said. "Words can't express what I felt in that place, but I think I was able to capture it in my drawing."

Professor John Redmond, dean of the Faculty of Art and Design at Monash, said he was delighted that a Monash fine arts student had received the national award.

"Drawing underpins all quality art and design activity, yet its significance and the skill involved is often underestimated," he said.

"I am delighted that Ms Tonkin has been acknowledged at the national level. The award reinforces the world-class reputation of our drawing program, of which we are extremely proud."

*Fiona Perry*



## Look ahead to Monash Open Day

Visitors to this year's Open Day at Monash University will get the chance to test alternative education using this virtual reality mask. The mask is used as part of a Faculty of Education masters unit that explores new and alternative ways to learn. Other events planned for Open Day include chemical and applied science magic shows, slime making sessions and chocolate testing. Held over two days on the first weekend in August, Open Day is the one weekend in the year when aspiring students and the public can visit the university's six Victorian campuses. Monash Open Day will be held at Gippsland, Parkville and Peninsula campuses on Saturday 3 August and at Berwick, Caulfield and Clayton campuses on Sunday 4 August. All campuses will be open from 10 am to 4 pm. For more information, visit [www.monash.edu.au/openday](http://www.monash.edu.au/openday) or contact +61 3 9905 2135. Photo Greg Ford.

## Aquatic ecosystem studies rewarded



**Rewarded: Professor Sam Lake is the first person outside North America to receive the North American Benthological Society Award for Excellence in Benthic Science.** Photo Greg Ford.

There is barely a stream in Victoria that Professor Sam Lake, from Monash University's School of Biological Sciences, has not examined in his quest over the past 30 years to understand how human and natural disturbances impact on the animals and plants that make up stream communities.

And now his significant contribution to benthic science – the study of the plants and animals that live on lake and stream bottoms and their role in aquatic ecosystems – has been acknowledged by the North American Benthological Society (NABS).

At the society's annual meeting, held in Pittsburgh, Pennsylvania in May, Professor Lake received the NABS 2002 Award of Excellence in

Benthic Science. He is the first person outside North America to receive the award, which was first presented in 1986.

The NABS' Distinguished Service Award subcommittee described Professor Lake as a model recipient of the award due to his outstanding contribution to research, teaching and management in benthic science.

"Dr Lake is an inspirational teacher who has supervised 30 PhD and masters students, several of whom have gone on to become leaders in freshwater ecology themselves," the subcommittee members said.

"He is widely known for his innovative thinking, his encyclopaedic knowledge, his enthusiasm, his wit

and his generosity in sharing ideas with others."

Professor Lake, who attended the NABS meeting to receive the award, said he was delighted his research efforts in basic and applied ecology and conservation had been acknowledged.

"I was astounded to be given the award as I had no idea that I had even been considered," he said.

Although Professor Lake is well known for his research into the effects of disturbance on stream communities, he is now trying to raise awareness of the relatively new and challenging field of restoration ecology.

"While there has been an ever-increasing interest in the restoration of degraded terrestrial and freshwater environments, there has not been an accompanying growth in ecological knowledge to guide and plan the restoration activities," Professor Lake said.

"For example, it does not necessarily follow that by putting logs (snags) back into rivers native fish will automatically return. Restoration ecology seeks to identify and develop ecological concepts that can increase our capacity to plan and predict the outcomes of restoration projects."

*Penny Fannin*

## IN BRIEF

### Monash India focus group launched

Indian High Commissioner Mr Rajendra Singh Rathore launched the Monash India Focus Group at a dinner at Monash's Clayton campus last month.

Speaking at the dinner, Mr Rathore said the establishment of the group was an example of the strong links that were being forged between Australia and India, especially within the university sector.

Professor Marika Vicziany, director of the National Centre for South Asian Studies, has been appointed convener of the group.

### South Africa campus hosts school debate

Monash South Africa hosted its first debating event with the Monash Training Day and Exhibition Debate last month.

About 90 secondary students from seven schools attended the event.

Ms Kate Orkin of Parktown Girls High School was voted best speaker on the day for her contribution to the affirmative 'that marijuana should be decriminalised.'

### Research lab opened

A new \$160,000 research laboratory was opened at Monash's Peninsula campus recently by dean of Science Professor Rob Norris.

The laboratory consists of state-of-the-art facilities for analytical research in the health sciences and will act as a research space for staff and postgraduate students.

### From fossils to physics at new science centre

Continued from page 1

For the next two years, the centre's main exhibition hall will be dominated by an interactive display that traces how life in Australia has changed over the past 3.8 billion years.

The centre will also house three smaller temporary exhibitions that will investigate the evolution of computing the importance of balances in chemistry and the effect of crazy ants on Christmas Island's ecology.

"The research laboratory will allow students and staff from Peninsula to engage in research that previously would not have been possible," Professor Norris said.

### Vale Dr John Pigot

Respected art academic and former Faculty of Art and Design staff member Dr John Pigot has died after a brief illness.

An art historian with teaching and research interests in 19th and 20th-century European and Australian art, Dr Pigot taught in the Theory of Art and Design department at Monash from 1996 to 1999.

He also held lecturing and research appointments at the University of Melbourne, Swinburne University and RMIT University, where he was a research fellow this year.

Dr Pigot died on 9 May.

### Drivers wanted for road rage study

A Monash psychology honours student researching road rage for his thesis is looking for volunteers to take part in a survey.

Mr James Pett, under the supervision of Dr Nikki Rickard, from the School of Psychology, Psychiatry and Psychological Medicine, is studying the factors that cause people to become angry when they drive.

Mr Pett is looking for people aged between 18 and 60, who drive a car at least three days a week, to fill in a questionnaire.

Anyone interested in taking part should contact Mr Pett on 0438 569 591 or email [jamespett@bigpond.com](mailto:jamespett@bigpond.com)

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# Leading the playing field

Monash University will establish itself as a premier sporting organisation, with new plans to elevate the university's involvement in all things sport over the next two decades.

Monash Sport has already formed ties with professional sports organisations linked to the AFL, NBL and the AIS in its bid to boost the profile of sport at the university.

And former Australian Olympic swimming coach Mr Vince Raleigh has just been appointed to head up swimming.

The Monash University Council is behind the push, passing a comprehensive report detailing Monash's position in regard to sport at its June meeting.

The report helps frame the role of sport within the greater Monash community now and in the future.

The report, titled *Sport at Monash: Toward 2020*, prepared and presented to council by Monash Sport general manager Mr Martin Doulton, links a range of sporting goals with the university's defining themes of innovation, engagement and internationalisation.

Monash is widely recognised as having some of the finest sporting facilities of any university in Australia,

offering thousands of staff and students the opportunity to satisfy their desire for competition, fitness and health while pursuing their vocation.

The facilities and services at Monash campuses are of the highest standard, ensuring maximum use for, and benefit to, students, staff and the communities surrounding its campuses, both in Australia and overseas.

And the opportunities provided by this sporting infrastructure have begun to be recognised by state and national sporting organisations as well as top-level sporting clubs.

Already, Monash has formed strategic alliances with the St Kilda Football Club (AFL) and the Victorian Titans basketball club (NBL). The Titans have now established both their administrative and training base at the Clayton campus and are working with the university to develop areas of mutual benefit for the club and its players and for students and staff at Monash.

Strong relationships have also been formed with Australian Swimming, Athletics Australia, the Australian Institute of Sport (AIS), the Victorian Institute of Sport and the Victorian Cricket Association through the Bushrangers Cricket Squad.

Mr Doulton said this form of association with top-level sporting clubs and organisations enhanced Monash's reputation and provided opportunities for participation that would otherwise not be available.

"High-quality facilities, strong relationships with strategic partners and clear pathways to sporting excellence all help to enhance our ability to further develop sports-related research and education opportunities," he said.

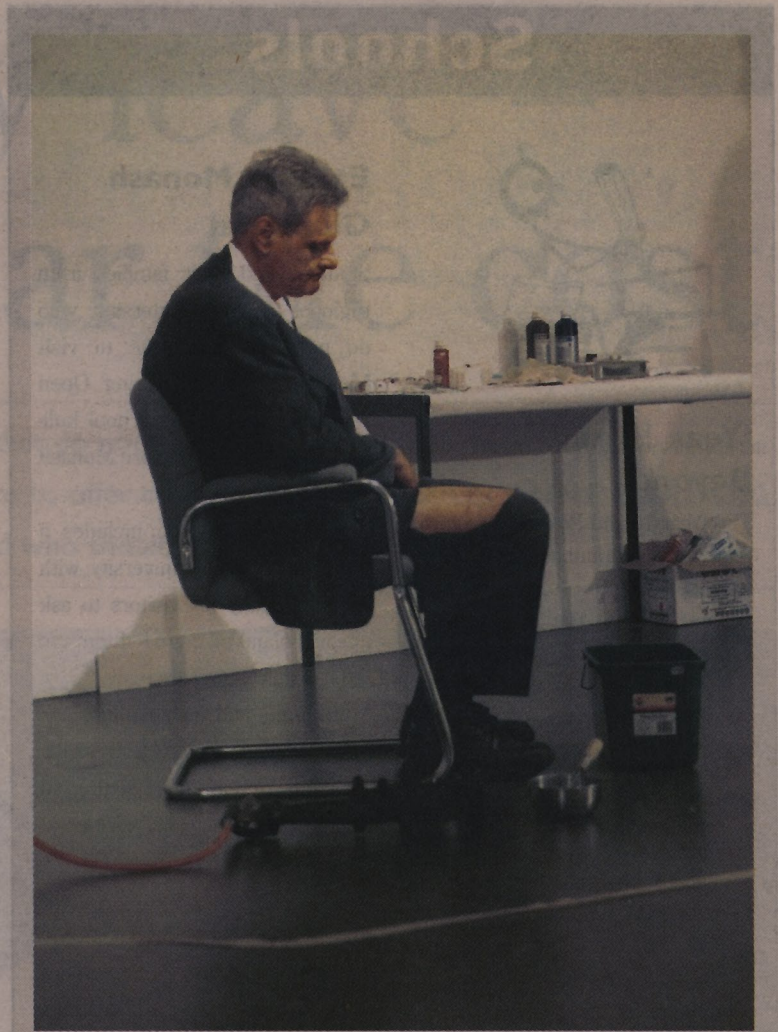
"The current alliances also provide endless opportunities for staff, students and the community, including possible work placements, linked research projects, the potential to attract grants and the development of future course units of direct application to the sports sector."

Mr Doulton said sport at Monash had the potential to become one of the defining features of the university.

"Sport can, without a doubt, help Monash become an even more attractive place to study, work and play, while enhancing its reputation as a leading university," he said.

"Above all, our intention is to help more Monash people become more active, more often and in more ways."

Konrad Marshall



## Protest art

Leading Australian performance artist Mike Parr cut a surreal and controversial figure at his performance, 'Close the concentration camps', at the Monash University Museum of Art last month. Declaring his support for asylum seekers in Australian detention centres, Parr sat for five hours in the middle of an empty gallery with his eyes, ears, nose and lips sewn together and the word 'alien' branded into his thigh. About 350 people visited the gallery to witness the performance, while others watched a live webcast of the event via a Monash web page. It was the first live webcast from Monash using the university's new quicktime streaming server. Photo Richard Crompton.

# Major drug company poised to join Monash science precinct

Drug discovery and development company Biota Holdings has made an in-principle agreement to be among the first tenants in Monash University's Science, Technology, Research and Innovation Precinct (STRIP), it was announced at the launch of the precinct last week.

Victorian Minister for Innovation Mr John Brumby launched the first of five planned stages of construction for seven buildings in the Monash STRIP.

The \$35 million, 13,000-square-metre first building is currently under construction and is due for completion in January.

The \$300 million Monash STRIP will be an epicentre for research, development and innovation, and is designed to support innovation by merging business and industry with the latest research that is known to have commercial potential.

Biota Holdings chief executive officer Dr Hugh Niall said Monash was creating a centre of excellence with the new precinct. He said the precinct would act as a magnet to attract scientists which in turn would attract students to the university.

Australia's chief scientist Dr Robin Batterham said the centre was not just important for Monash but also for Australia. He said experts could no longer work alone on projects but worked best in clusters, bringing together expertise from a range of fields.

"That's where we will get the innovations of the future," he said.

Vice-chancellor Professor David Robinson said the Monash STRIP would also create an integrated learning environment where academics from different fields would be able to work side by side.

"The Monash STRIP will be a place for people to develop their ideas and turn them into a commercial reality that will have huge significance for Australia nationally and internationally," Professor Robinson said.



Doing business: Victorian Minister for Innovation Mr John Brumby, left, with vice-chancellor Professor David Robinson and deputy vice-chancellor (Resources) Ms Alison Crook. Photo Peter Anikijenko.

"Some of the most exciting developments such as bioinformatics, bioengineering, nanotechnology and environmental science are occurring across disciplines and facilities."

Development of the STRIP is being led by deputy vice-chancellor (Resources) Ms Alison Crook, who said the STRIP's proximity to the centre of advanced manufacturing in Australia would encourage the commercialisation of ideas.

"Being on a university campus means that researchers from a wide

range of fields and with many different interests will spark off each other," Ms Crook said. "They will be located in a creative environment that provides opportunities for the cross-fertilisation of ideas and technologies."

About half the space in the STRIP will be occupied by commercial tenants. The university's science, IT, engineering and other relevant faculties will occupy the other half of the space.

Penny Fannin

# Step forward in prostate disease understanding

## MEDICAL RESEARCH

Changing ratios of hormones could be responsible for initial abnormal changes in prostate growth, a Monash University PhD researcher has found.

The findings are an important step forward in understanding the elements that lead to changes in the growth of the prostate and how such changes could lead to the development of prostate cancer.

Mr Stephen McPherson, a researcher at the Monash Institute of Reproduction and Development, used specially bred ArKO, or estrogen-free, mice to investigate how altering normal levels of androgens (male hormones) and estrogens (female hormones) regulated prostate growth, which occurs in the normal human ageing process.

Prostate cancer is Australia's second leading cause of male mortality from cancer, claiming more than 2500 lives annually.

"Nobody is sure how prostate cancer starts. Theories have ranged from hormonal imbalances, such as over-expression of androgens, to the effects of estrogens or to mutations in growth factors," Mr McPherson said.

But by using the ArKO mice, Mr McPherson, who is working under the supervision of the director of the Centre for Urological Research and IRD deputy director, Professor Gail Risbridger, used a novel approach in that his research looked at the effects

of removing estrogen on prostate growth rather than the effects of adding extra estrogen to it.

The ArKO mice, which don't make estrogen, have abnormally elevated androgen levels, which Mr McPherson said researchers believed were affecting the prostate.

Initial studies by Mr McPherson, which examined the prostate of the ArKO mice, found that the prostate was enlarged compared to a normal mouse.

The next step of the research, he said, had been to place estrogens in ArKO mice to establish whether the hormone levels of these mice could be brought back to normal levels and prevent the abnormal increase in prostate size.

"It appears we can do that, but we have found that the enlargement seems to be benign, which means elevated levels of androgens alone appear not to lead to cancer as previously thought," he said.

"If you balance the effects of androgens and estrogens, it appears you can stop the prostate enlargement."

Mr McPherson said his initial findings were important in helping to understand how prostate disease develops.

"In the overall scheme of things, we are getting further down the track of how the prostate is regulated and how it responds to androgens, estrogens and other influences."

Mary Viscovich



## Schools



### 'Year 10 and Beyond'

The 'Year 10 and Beyond' brochure is now available and has been posted to all schools. To receive additional copies, fill in the order form enclosed with the brochure and fax it to the Prospective Students Office on +61 3 9905 3168.

### Monash University Open Day

Monash Open Day will be held on Saturday 3 August at the Gippsland, Parkville and Peninsula campuses and on Sunday 4 August at the Berwick, Caulfield and Clayton campuses.

### Monash in Canberra

A Monash University representative will be available at the Canberra Careers Market, to be held at the Australian Institute of Sport arena on 7 and 8 August.

### Explore Monash Gippsland

Students and their families from regional areas and interstate who do not have the time to visit Monash University during Open Day can do so in the school holidays as part of the Explore Monash program.

The free program includes a brief talk about the university, with an opportunity for visitors to ask questions and take guided tours of the campus.

Students and their families can also talk with faculty representatives and current uni students, and can elect areas of academic interest to be included on the tour.

The next Explore Monash session will be held at the Gippsland campus on Tuesday 24 September from 10.30 am to 2 pm. Bookings are essential.

For more information, contact Ms Sharon Foster on +61 3 9902 6594 or +61 3 5122 6594, or email [sharon.foster@adm.monash.edu.au](mailto:sharon.foster@adm.monash.edu.au).

# Wireless IT to ease home office isolation

## INFORMATION TECHNOLOGY

People working from home could have faster and more reliable network access under a Monash University project that uses wireless technology to bring broadband computer networking into homes.

The Suburban Area Network (SAN) project, led by Dr Ronald Pose and Dr Carlos Kopp from the School of Computer Science and Software Engineering, provides a low-cost, reliable alternative to low-bandwidth connections.

Dr Pose and Dr Kopp first developed the idea of a SAN in 1997 when they recognised that telecommunications companies did not offer affordable, flexible or secure high-speed data connections to home users.

PhD candidate Mr Adrian Bickerstaffe, who worked on the project with fellow computer science students Mr Enes Makalic and Mr Slavisa Garic, was named the 2001 Victorian winner of the Siemens Prize for innovation for the project.

His thesis, 'Suburban area networks: access control and management', which was based on his work on the project, was judged the best final-year thesis in Victoria in an engineering discipline.

He said the technology would benefit the increasing number of people working from home offices.

"People working from home and trying to access a head organisation's network often have to go through low-



**Making life easier: Monash PhD candidate Mr Adrian Bickerstaffe is helping provide faster and more reliable network access for people working from home.**

bandwidth connections that are unreliable and slow," Mr Bickerstaffe said.

"Even using cables in high-bandwidth networking can be overly expensive for home use and, depending on a number of factors, may still not provide the quality of service people expect and receive in the workplace.

"Using wireless technology enables us to bring the benefits of high bandwidth into homes and commercial settings with much less cost. Once the initial outlay of purchasing the hardware has been made, there are none of the implicit ongoing fees that are common with wired services."

Other benefits of the technology, Mr Bickerstaffe said, included increased privacy and security, particularly for business users.

"A SAN is a self-contained private network, completely separate from the existing infrastructure owned by telecommunications companies. This is particularly attractive to security-conscious business users," he said.

In addition to benefiting business, Mr Bickerstaffe said, the technology could be applied to networking of government branch offices, university campuses and regional areas.

*Derek Brown*

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## Net benefits for business in e-research

A Monash University marketing academic has identified what could be the key to successful online trading.

Dr Chris Dubelaar, a senior lecturer in the Department of Marketing, believes one of the most significant obstacles confronting e-commerce today is consumer trust – a recent US survey that found nearly 70 per cent of web users simply do not trust websites.

Before potential customers begin buying goods online, web merchants have to reduce the perceived risk by increasing the level of trust, Dr Dubelaar says.

With the help of colleagues from two interstate universities, Dr Dubelaar devised an experiment to confirm his theory that the trustworthiness of the web merchant comprised three dimensions.

"The first dimension is privacy protection – the belief that a company is going to take care that they don't damage you," he said.

"The second dimension is benefit delivery. Is what the website claims is going to happen actually going to happen?"

"Finally, there's the issue of willingness to rectify. That is, when things do go wrong, what position of integrity has the company taken? Will they refund your money if the product arrives in pieces, or if it doesn't arrive at all or doesn't suit you?"

The researchers theorised that when all these dimensions were present, a web merchant's trustworthiness would increase, which would increase the likelihood of a sale.

They interviewed 130 people, investigating the value each person placed on the dimensions according



**Boosting net sales: Dr Chris Dubelaar believes online traders need to increase buyers' trust to boost sales.**

to different variables such as product, price discount and delivery time.

"It was clear the trust factors we had identified played a significant role in deciding whether or not to purchase a product online," he said.

The survey showed that the biggest drive to shop online was benefit delivery, followed by price discounts, willingness to rectify, a privacy statement and good delivery times.

"Privacy is still one of the critical stumbling blocks that face firms operating online," he said.

"People are very reluctant to offer their personal details to online operators. Having a privacy statement that is readily available, credible and makes sense to the target market will help overcome some of these problems."

The web has become considerably safer for online buyers in recent years, Mr Dubelaar says.

"Four or five years ago very few people had secure sites, mainly

because they were just too difficult to set up. But now anyone can have a secure website. It's very inexpensive."

The improvement is due mainly to third-party privacy verification schemes, which have followed in the footsteps of the online security verification schemes that began appearing several years ago.

"We are now seeing companies offering upfront, written statements on what they intend to do, and not do, with your information," Dr Dubelaar said.

"This helps the online retailer gain some of the ground lost to the bricks-and-mortar operator where, for some reason, many people still seem happy to relinquish their personal details."

The survey was undertaken with the assistance of Dr Lawrence Ang of Macquarie University and Dr Boon-Chye Lee of the University of Wollongong.

*John Clark*



# Paid maternity leave – why we must bear the cost

## OPINION



Australia is one of only two OECD countries that do not provide a national paid maternity leave scheme, but the government is under mounting pressure to offer one. Monash academic **DR ANNE BARDOEL** outlines why Australia needs such a scheme and who should pay.

**I**T IS TIME Australia recognised the necessity of introducing a national scheme that provides women with paid maternity leave.

Most advanced countries have compulsory paid maternity leave and, by the end of this month, Australia and the US will be the only two OECD members not providing some form of national maternity leave scheme.

The view that having children is an individual decision and therefore the individual should bear the cost is very shortsighted.

It does not recognise that in Australia today (a) most families with young children require both parents to remain in the paid work force and (b) the traditional family structure of a male breadwinner in a single-earner household with dependent children only applies to one in six Australian households.

However, the traditional family structure retains a stronghold on popular aspirations and underpins the basis of many of our social policies and business organisations.

It is time we recognised the transformation of family structures and developed sensible social policies that reflect the real situation.

We also need to take account of changing demographics and inequalities in the current system.

Australia's total fertility rate today is below replacement rate and raises serious concerns for the workforce 30 years from now.

Currently, only one-third of Australian women have access to paid maternity leave, and most of these women receive less than 12 weeks' paid leave.

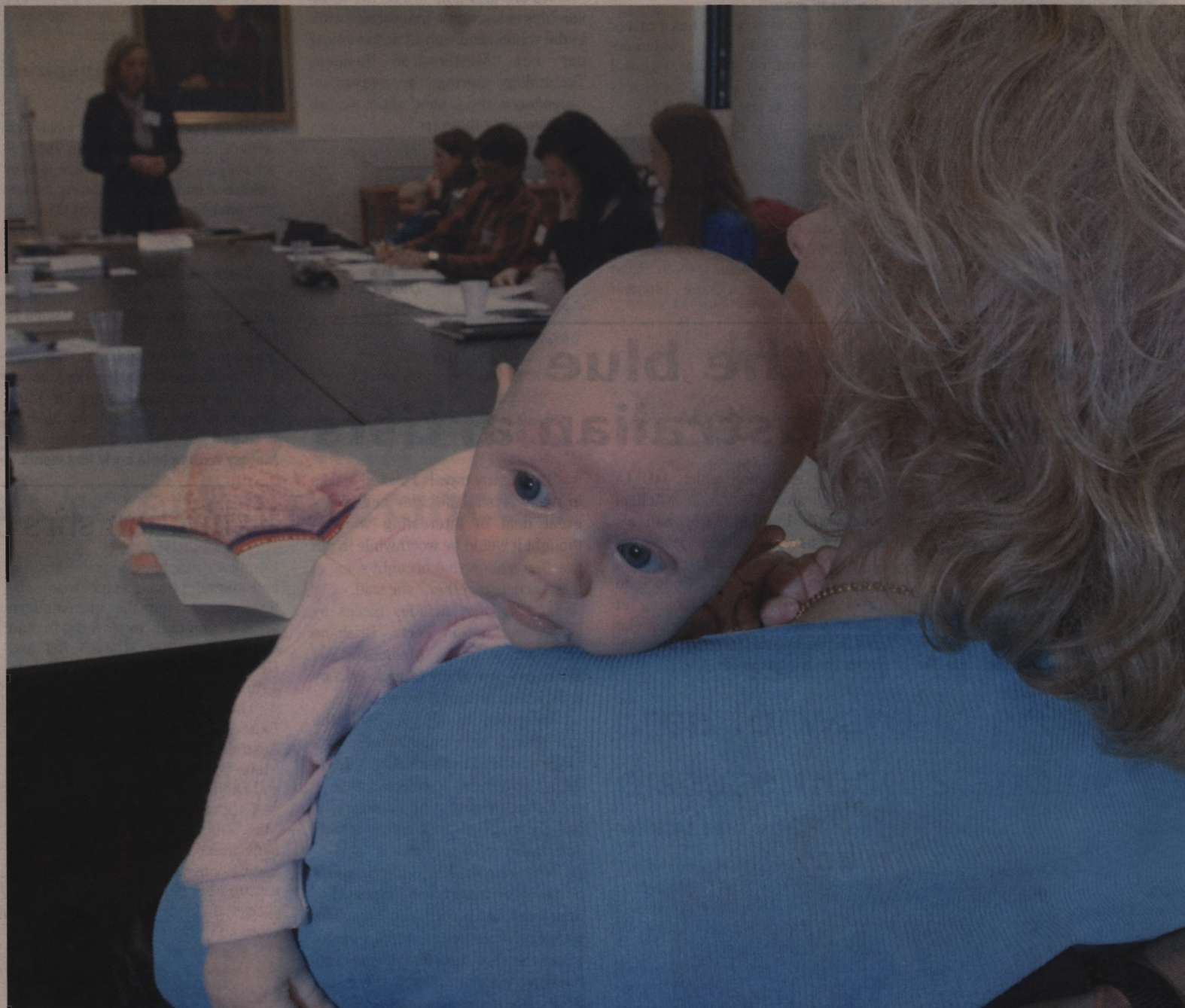
Maternity leave is also more likely to be available to women in professional jobs and not to women in non-professional or female-dominated industries.

Negotiated agreements are certainly not the answer. The available evidence demonstrates that paid maternity leave provisions in enterprise agreements are rare – they are currently provided in less than 6.7 per cent of operating collective agreements and one per cent of Australian Workplace Agreements.

A national policy, however, would have the potential to broaden the availability of maternity leave to all groups of women.

There are a range of schemes that could be introduced, but the funding model needs to protect the interests of women, employers and taxpayers.

Countries that currently offer maternity leave schemes provide between two and six months' leave, paid at 80 to 100 per cent of a woman's previous earnings. The schemes ensure women are not pressured to return to work early and compensate them for any workplace disadvantage experienced due to time away from work.



**Family support:** Dr Anne Bardoel believes the federal government must introduce a national paid maternity leave scheme to encourage more women to start families. Photo Peter Anikijenko.

Many opponents of paid maternity leave schemes base their concerns on the belief that any such scheme would be the financial responsibility of individual employers, adversely affecting small business in particular.

These fears were expressed in the wake of the extensive publicity given

For these reasons, the International Labor Organization does not support a funding model for a paid maternity scheme in which individual employers are directly liable for payments. Very few OECD countries require employers to be solely responsible for funding mater-

releasing the *Valuing Parenthood Report*, which outlined a number of different funding models for paid maternity leave.

Prime Minister John Howard recently ordered the public service to provide detailed costings and options on paid maternity leave schemes.

work arrangements and part-time work, and protection from discrimination often faced by parents with family responsibilities.

Government has a vital role to play in developing social and community structures and workplace practices and attitudes that are conducive to employees balancing their work and family lives.

■ Dr Anne Bardoel is deputy head of the Department of Management in the Faculty of Business and Economics at Monash University and lectures in workforce diversity issues, organisational behaviour and change management. She is also president of the Work Life Association and has recently completed a major study of work life issues in Australian companies. The current focus of her research is on organisational strategies for work and family balance, and she has published several articles in academic journals on this topic.

### **"It is time we recognised the transformation of family structures and developed sensible social policies that reflect the real situation."**

to the Australian Catholic University (ACU) after it announced plans to give all new mothers on its staff a year's paid leave.

Far from advancing the cause for paid maternity leave, the ACU announcement concerned many employers, especially small businesses, which justifiably argued that such a scheme would bankrupt them. Others argued it would lead to employers discriminating against women.

nity leave, with most existing schemes funded by governments, either exclusively or in combination with employers.

In Australia's case, the best option may be funding from general taxation revenue, where the cost is spread across all taxpayers and payment is made through the social security system.

Ms Pru Goward, the Federal Sex Discrimination Commissioner, has raised the profile of the debate by

Opposition Leader Simon Crean has promised Labor would introduce a national paid maternity leave scheme if elected, while the Democrats are proposing replacing all existing maternity leave agreements with a 12-week government payment at a minimum rate. Meanwhile, the ACTU is lobbying for at least 14 weeks' paid maternity leave.

But introducing paid maternity alone will not create a family friendly society. We also need affordable and quality childcare, access to flexible



# Shakespeare classic parallels modern life

A tale about a husband starving his wife in order to tame her may seem of little relevance to audiences living in a post-feminist world.

But according to Mr Des James, director of the Bell Shakespeare production of *The Taming of the Shrew* to be performed at Monash University this month, the play has many parallels to modern life.

"While Shakespeare's satirical look at courtship and marriage presents some interesting tensions for audiences today, particularly with the submission of Katerina (the wife) at the end of the play, *The Shrew* does resonate eternal conflicts that exist in every relationship," he said.

"Regardless of the play's historical context, this battle of wills is the most enduring aspect of the play for modern audiences and one that I have concentrated on."

Mr James said the character of Katerina was, in fact, very contemporary and one many women could identify with.

"Today we live in an era of feisty, independent women. It goes with the territory. Kate's 'shrewish' behaviour is unusual in an Elizabethan context but so familiar to women today," he said.

"For example, the tensions arising from a woman's desire to fulfil her full potential in a male-dominated world, particularly in terms of careers and education, or just preserving one's identity and independence in terms of relationships and family is very much alive as an issue."

The production, which has a cast of nine, borrows from many contemporary and familiar popular cultural forms but, says Mr James, the words remain Shakespeare's.

The season of *The Taming of the Shrew* at Monash is being sponsored by the Monash School of Business Systems.

Professor Andrew Flitman, head of the School of Business Systems, said supporting the play was the latest in a series of sponsorships which have included concerts by the Monash

Symphony and the Asian Youth Orchestra and a Bell Shakespeare production of *The Tempest*.

Professor Flitman said the innovation of the various productions mirrored the values and directions, both present and future, of the school.

"It is important that a successful school like ours recognises its place within the broad-based university and the community and is able to make a significant contribution," he said.

"We are also able to use the sponsorships to showcase innovations within the school, and we will be launching our new Masters of Business Technology during the season of *Copenhagen*, the second show we will be sponsoring this year."

**What:** *The Taming of the Shrew*

**When:** 19 to 22 July

**Where:** Alexander Theatre, Clayton campus

**Who:** For more information, contact +61 3 9905 1111.

Derek Brown

## A step into the blue for emerging Australian artists

An exhibition of work by six emerging artists from around Australia is on show this month at the Monash University Museum of Art (MUMA) at the university's Clayton campus.

Featuring new and recent pieces by Nadine Christensen, Gareth Donnelly, Sarah Elson, Cherine Fahd, Jo Grant and Robert Pulie, *into the*

*blue* is an exhibition which MUMA senior curator Ms Linda Michael hopes will highlight the nation's diverse artistic talent.

In 2000, Ms Michael received a grant from the Australia Council to travel around Australia looking at artists' work. This exhibition, she says, is just one of the many potential shows the trip inspired.

"During my travels I visited artists in many Australian cities and saw a great deal of interesting work. I thought it would be worthwhile to put together a show that brought some of these artists together," she said.

*into the blue* includes pieces by artists working in Perth, Brisbane and Sydney, giving Melbourne art lovers an opportunity to see works by artists from around Australia.

According to Ms Michael, the exhibition is held together more by a range of shared qualities than a single theme. It includes an eclectic range of art forms, ranging from photographs and paintings to cast metal insects and plaster relief portraits.

"With *into the blue*, I chose artists primarily because I was interested in their work, not according to a particular idea. Nevertheless, when I began to put the show together, it was clear there were many links between the works. For instance, a quality of lightness and a meticulous attention to detail are characteristic of many works. Even images of lightness abound - birds, the moon, a clear sky, leaves and flowers."

Ms Michael said all the pieces in the exhibition encourage us, as viewers, to extend our thinking beyond what we see. The works use either precise observations or a clear and humorous approach, to first focus and then expand our vision "into the blue".

Some of the artists taking part in the exhibition will be at the Monash University Museum of Art at 1 pm on Wednesday 26 June to talk about their work.

A 16-page catalogue, with essays by the curator and six other writers, accompanies the exhibition.

**What:** *into the blue*

**When:** Until 24 August

**Where:** Monash University Museum of Art, Clayton campus

**Who:** For more information, contact +61 3 9905 4217.



Making their mark: Emerging artists show their diversity in the latest exhibition at the Monash University Museum of Art.

## ARTSSCENE

### Acclaimed artist new to faculty

Monash University's Faculty of Art and Design last month appointed well-known performance artist Stelarc as artist-in-residence.

An internationally recognised artist in the field of conceptual, performance and body art, Stelarc, who was also awarded an honorary doctorate by the university in March, will spend the next three months working and teaching at the Caulfield campus.

The artist is a former student of Caulfield Technical College, which is now part of Monash.

For more information on the artist-in-residence program, visit the faculty website at [www.artdes.monash.edu.au/faculty/galleryindex.htm](http://www.artdes.monash.edu.au/faculty/galleryindex.htm).

### Young writers inspired by book talkers

Aspiring young crime and adventure writers studying at Victorian secondary schools will get the chance to hear published authors speak during the latest book talkers show at Monash University's Clayton campus next month.

Some of Australia's best known crime, action and adventure writers will be on hand during the session to talk about their work and answer questions from the audience.

Produced at Monash in conjunction with the Australian Centre for Youth Literature, the show will be held on 6 August and follows a session on fantasy writing held early last month.

## Exhibition stirs digital imagination

Computer graphics, laser projections and digital photographic manipulations are among the ultra-modern artistic media explored in an exhibition at the Monash Art and Design Faculty Gallery from 8 July to 4 August.

The exhibition, *The Synthetic Image*, features the works of 13 Australian artists, including staff from Monash's Department of Multimedia and Digital Arts.

Exhibition curator and contributor Mr Vince Dziekan, from the Department of Multimedia and Digital Arts, said the basic idea was to set up the gallery as two distinct spaces through the use of a white room and a dark room.

"This will allow the works that are print-based to exist in a traditional gallery presentation format, with another space set up as a dark room for projection of more immersive, screen-based work," he said.

According to Mr Dziekan, the digital image generally incites a different type of involvement from the viewer than other artistic media because a degree of interaction is required.

"In one of the works, involvement extends to the viewer actually creating the piece, by arranging on-screen elements that trigger different types of sounds," he said.

Interaction with specific works of art is just one way in which Mr Dziekan hopes the exhibition will show the vitality and vibrancy of digital art in Australia.

He said the digital image was no longer confined to alternative art spaces and that traditional institutions were increasingly bringing new media into the fold.

"Within the arts, the notion of new media has been on the agenda over the last decade or so, and I think people are becoming more comfortable with that kind of work," he said.

"The 'gee-whiz' factor carried it along for a little while, but the art

For more information on the book talkers events or to book, call +61 3 8664 7014 or email [acyl@sv.vic.gov.au](mailto:acyl@sv.vic.gov.au).

### Student artists on show for Open Day

Work by students from Monash University's Centre for Art and Design at the Gippsland campus will be showcased in an exhibition that coincides with Monash Open Day this year.

Running from 29 July to mid-August, the exhibition will allow people visiting the campus during Open Day on Saturday 3 August to see a wide variety of students' work, including paintings, drawings, prints, installations and ceramics.

For more information, contact the Switchback Gallery at Monash Gippsland on +61 3 5122 6261.

### Old music for a new audience

Visitors to Monash's Clayton campus next month will be transported back in time to the early 18th century, when Melbourne-based group Past Echoes performs at the Robert Blackwood Concert Hall.

Past Echoes is a group of musicians who specialise in performances of songs from the Renaissance and Baroque periods.

The concert, to be held on 10 August, will include a performance of the work *Acis and Galatea* by Handel.

Cost is \$22 for adults and \$16.50 concession. For more information and bookings, call +61 3 9905 1111.



Vibrant: Exhibition curator and contributor Mr Vince Dziekan believes his latest exhibition will show the vibrancy of digital art. Photo Greg Ford.

community has got over that to a degree. I hope the exhibition will show that the work people are doing is pretty topical in terms of the broader visual arts."

According to Mr Dziekan, some of the artists created their works on computers using conventional software like PhotoShop or wrote their own software to create the images, while others used a computer to digitally manipulate photos.

"People still get that shock when they look at the images because they don't know how they were crafted or fabricated, so there's a wonderful sense of mystery and magic in the work."

**What:** *The Synthetic Image*

**When:** 8 July to 4 August

**Where:** Faculty of Art and Design Gallery, Caulfield campus

**Who:** For more information, contact the gallery on +61 3 9903 2707

Konrad Marshall



# Attacks on judiciary pose danger to independence

Recent unjustified attacks by politicians on High Court judge Justice Michael Kirby and on the Federal Court have exposed the perceived trend of a growing disrespect for the judiciary, according to Monash constitutional law expert Professor H. P. Lee.

"There is the danger of an erosion of the independence of the judiciary if these constant and unjustified attacks are maintained," he said.

"For the rule of law to prevail, there must be a clear separation between the judicial, executive and parliamentary arms of government. The rule of law and social cohesion depend on the confidence of the public in a very impartial and independent judiciary."

Judicial independence is one of the many issues explored in a new book, *The Australian Judiciary*, recently released by Professor Lee and co-author Monash Emeritus Professor Enid Campbell.

The book sheds light on one of the most important, and yet possibly most misunderstood, institutions in Australian society, covering its history, training, work, techniques, problems and future.

The book is aimed at a broad audience of national and international scholars, judges and legal practitioners, as well as the layperson who is interested in knowing more about the workings of the judiciary.

Professor Lee said that in the face of unfair attacks on the judiciary, it had traditionally been the role of the Federal Attorney-General to defend judges.

"However, the current Attorney-General has publicly disowned that role - he was conspicuously silent when Justice Kirby was publicly vilified by Senator Bill Heffernan, and it was the Federal Court itself who called Immigration Minister Phillip Ruddock to account for his comments against the court," Professor Lee said.



**Questioned: Judicial independence is explored in a new book by Monash law expert Professor H. P. Lee.** Photo Newspix.

The Federal Court example showed that in the absence of a defence mounted by the Attorney-General, a court would not remain inactive where there was a danger of its independence being questioned, he said.

"It was a very unusual step for the court to take, because the danger of the court defending itself is that it could bring about a possible

confrontation with the executive arm of government. In such circumstances, judges can lose out.

"When the Malaysian judiciary and Prime Minister Mahathir had a confrontation, the top judge of the land and two senior Supreme Court judges were removed. This is a situation we want to avoid at all costs in this country."

Fiona Perry

# Exhibition reveals artists at play

Challenging the stereotype of the solitary artist working in isolation, a collective of Melbourne artists, including two Monash staff members, have turned to each other for inspiration.

Ms Geraldine Burke, a lecturer in Monash's Faculty of Education and one of four artists who make up Refluxus, said the group produced art through a collaborative process that focused on the interplay of artistic discovery.

The Refluxus collective, which also includes artists Ms Pamela Irving, Ms Maria Luisa Nardella and Ms Heather Shimmen, has been together for six years and has worked on more than 20 shared projects, some of which will be on show this month in an exhibition at the Bendigo Art Gallery.

Ms Burke said the artistic process used by Refluxus was originally inspired by a French parlour game from early last century called 'exquisite corpses', which was used by the surrealists to create collaborative art.

"In exquisite corpses, a piece of paper is passed around the room and different people have to draw a head, a body or legs without seeing what the others have drawn, thereby creating unusual composites," she said.

"The surrealists used this game to unlock the more intuitive and subconscious aspects of their creativity, and we are expanding on that process in our own work. However, we have placed the game in a contemporary context. Our artwork responds to



**Playful: Members of Refluxus, from left, Heather Shimmen, Pamela Irving, Maria Luisa Nardella, and Geraldine Burke have fun with their art.** Photo Greg Ford.

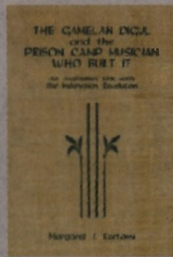
current issues and often utilises the objects of everyday life."

Projects on show at the exhibition include the 'Fraky Bridge' project, in which oversized fridge magnets with images on them are arranged on fridges located around the gallery. People visiting the exhibition are encouraged to interact with the magnets to create new designs.

Another project titled 'This is Not a Domestic Object' includes 80 rolling pins, which have been transformed using digital images, paint and a number of other objects, into humorous parodies far removed from their original function.

Derek Brown

## INPRINT



### The Gamelan Digul and the Prison-Camp Musician Who Built It

An Australian Link With the Indonesian Revolution

By Margaret Kartomi  
Published by University of Rochester Press  
RRP: \$175

This book tells the story of a group of Javanese 'matching' musical instruments called the gamelan Digul, and their creator, the Indonesian musician and political activist Pontjopangrawit, who was arrested in the 1920s for his participation in the movement to free Indonesia from Dutch rule.

Made in 1927 from materials found in the Boven Digul prison camp, including pans and eating utensils, the gamelan Digul became a symbol for the Indonesian independence movement.

Margaret Kartomi is professor of music at the Monash School of Music - Conservatorium and has been published widely on the music of Indonesia and other ethnomusicological topics.



### Reshaping Life

Third edition

Key Issues in Genetic Engineering

By Gustav Nossal and Ross Coppel  
Published by Melbourne University Press  
RRP: \$34.95

As scientific technologies grow more powerful, people are becoming more and more concerned about the implications of reproductive, cellular, DNA and genetic research generally. With much of the technology in these areas being rushed into widespread use, there is little time for debate or public education.

This book outlines the key issues of modern biotechnology in a simple but authoritative way, discussing some of the implications both for scientists and for society.

*Reshaping Life* addresses questions such as who should decide what constitutes an ethical, or safe, experiment, and how our ability to manipulate life affects our perception of our place in the universe.

Ross Coppel is professor of microbiology at Monash University and director of the Victorian Bioinformatics Consortium. Sir Gustav Nossal is a former director of the Walter and Eliza Hall Institute and chairman of the Strategic Advisory Group of Experts of the Vaccines and Biologicals Programme of the World Health Organisation.



### Transitions Between Contexts of Mathematical Practices

Edited by Guida de Abreu, Alan Bishop and Norma Presmeg  
Published by Kluwer Academic  
RRP: \$160.60

This book focuses attention on mathematics learners who are moving either constantly, or permanently, from one educational context to another. Transition between contexts could be from one educational system to another, from one level to another, or from one culture to another.

The book offers both empirical studies and significant theoretical reflections from a socio-cultural perspective, with the aim of providing the bases for the development of more socially and culturally responsive mathematics learning environments.

It will appeal to researchers and postgraduate students in the fields of mathematics education, cultural psychology, multicultural education and immigrant and Indigenous education.

Alan Bishop is professor of education and associate dean in Monash University's Faculty of Education. Guida de Abreu lectures in the Department of Psychology at the University of Luton in the UK. Norma Presmeg is a professor in the Department of Mathematics at Illinois State University in the US.

## POSTscript

Monash alumnus Mr Don Watson recently launched his new book, *Recollections of a Bleeding Heart: A Portrait of Paul Keating PM*, which provides an inside account of life, politics and combat in the highest office in the land. The book is based on notes Mr Watson kept over four years as Keating's speechwriter. It is published by Random House.

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

Books featured in 'Inprint' are available or can be ordered at Monash's four on-campus bookshops.  
• CITSU (Caulfield) +61 3 9571 3277 • Clayton +61 3 9905 3111  
• Gippsland +61 3 5122 1771 • Peninsula +61 3 9783 6932  
www.monash.edu.au



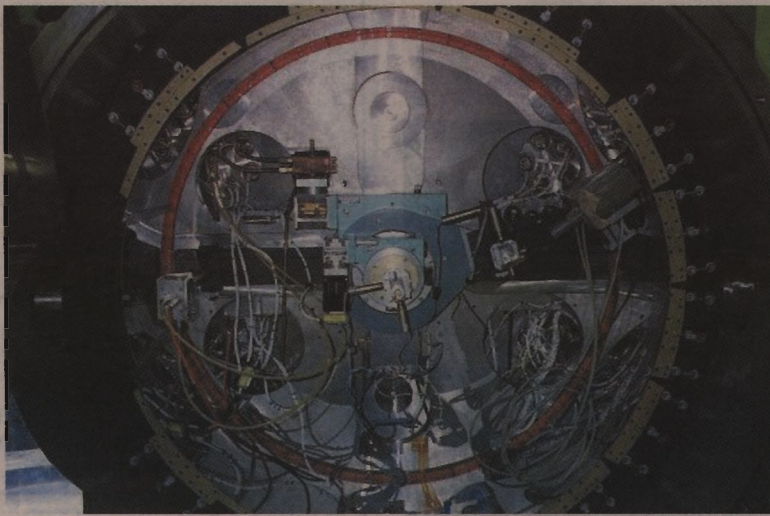
# New theory could help identify diseased tissue

A theory describing how X-rays scatter has been developed by Monash University physicists which could have implications for identifying diseased human tissue or detecting flaws in industrial materials.

The team, led by Dr Konstantin Pavlov and Associate Professor Michael Morgan from the School of Physics and Materials Engineering, has developed a mathematical theory that describes X-ray diffraction tomography (XDT).

XDT has been in development for more than 10 years, but its progress has been hampered because scientists have been unable to accurately describe the way X-rays scatter once they have struck the material being imaged.

But Dr Morgan and Dr Pavlov, with PhD student Mr Cameron Kewish, have solved this problem with their mathematical theory that describes exactly how incoming



**State-of-the-art facility:** A synchrotron such as this was used to test the XDT theory, which could help identify diseased tissue.

photons, or X-rays, interact with the atomic electrons of the material.

Until now, a process called X-ray computed tomography (CT) has been routinely used in clinical medicine

and industry to image the structure of materials, but it is thought that XDT could produce more valuable images.

"Whereas conventional CT produces a map of density, XDT shows

structure and chemical composition," Dr Morgan, deputy director of the university's Centre for X-Ray Physics and Imaging, said.

"Two materials could have the same density but a different composition, and XDT will allow us to image these differences."

The theory developed by Dr Morgan and his colleagues allows them to reconstruct what happens when X-rays interact with materials such as bone or wood.

According to Dr Morgan, XDT could be used to identify cancerous tissue by measuring the scatter profile of the tissue and comparing it to non-diseased tissue.

"Standard radiographs produce a map of density, but the XDT technique shows the ordering of atoms in a material," he said.

"Once we understand ordering at the molecular level, we can get a better understanding of the progression of diseases such as osteoporosis."

The technique could also be used by industry to test the strength of materials.

"For example, you could map stress distributions in a material to ensure the integrity of critical components such as ceramics and alloys used in engine blocks," Dr Morgan said.

The XDT theory was successfully tested using a synchrotron – a particle accelerator that generates intense beams of light, allowing the microstructure of materials to be imaged with unprecedented accuracy.

"Synchrotrons are an extraordinary tool for testing fundamental ideas and carrying out experiments that are otherwise impossible to do in the laboratory."

Australia's first synchrotron is to be built at Monash, with construction beginning next year. The synchrotron will provide Australian science and industry with a state-of-the-art facility.

*Penny Fannin*

## Mabo – social justice or political failure?

The Mabo decision had failed to deliver equality to the Indigenous community in Australia, deputy leader of the Australian Democrats Senator Aden Ridgeway told the audience at Monash University's annual Castan Centre for Human Rights Law Lecture.

During his lecture, which marked the 10-year anniversary of the Mabo decision, Senator Ridgeway explored the Mabo legacy and broader contemporary

issues of reconciliation, land rights, human rights and social and economic security.

He said that while many people believed the Mabo decision would deliver social justice, political leadership had failed to bring about equality.

"The hopes of many Indigenous people were dashed when it became evident that the potential of native title to provide equal respect for their cultural heritage could not be realised," Senator Ridgeway said.

"While we did end up with a Native Title Act, its amendment after the 1996 Wik decision has rendered it non-beneficial in its effect on Aborigines by licensing governments to racially discriminate against the interests of Indigenous peoples.

"It has been a spectacular failure in delivering on its promise – 30 determinations in 10 years and 590 claims still unresolved."

Senator Ridgeway said one of the major hurdles towards reconciliation was government attitude to Indigenous affairs.

"Recognition has only ever been partial, and then given begrudgingly and in a compromised form," he said.

"Leadership has been more forthcoming in the law than it has in parliament because at least the law has remained 'colourblind' in recognising Indigenous rights."

*Diane Squires*



**Seeking equality:** Senator Aden Ridgeway presents the annual Castan Centre for Human Rights Law Lecture, hosted by Monash's Faculty of Law. Photo Joe Mann.

## International synchrotron expert joins Monash

Australia's first professor of X-ray and synchrotron physics, Rob Lewis, has arrived at Monash University with plans to continue his world-class research into how X-ray techniques could be used to improve the early diagnosis of breast cancer.

Professor Lewis is an internationally recognised expert in synchrotron science who has been investigating how synchrotron radiation might be used as a 'gold standard' for medical imaging.

He has 22 years' experience in experimental X-ray physics and has led the X-ray imaging detector group at the Daresbury synchrotron radiation source in the UK for several years.

Deputy vice-chancellor (Research and Development) Professor Peter Darvall said Professor Lewis's skills as a science advocate and his enthusiasm in promoting how synchrotrons could be used would be invaluable for both staff and students.

Synchrotrons produce beams of intense light that can be used to reveal the microscopic structure of materials from proteins to wood.

Australia's first synchrotron is to be built on part of an 11-hectare site at Monash University's Clayton campus, with site preparation works beginning in September.

The unsurpassed precision of synchrotrons makes them invaluable tools for designing new drugs, manufacturing new-age materials and making micro-machines, Professor Lewis said.

He said synchrotrons had become essential pieces of infrastructure for



**X-ray expert:** Monash's new professor of X-ray and synchrotron physics Rob Lewis will play an integral role in the Australian synchrotron at Monash. Photo Greg Ford.

many areas of science and that synchrotrons could ultimately be used to develop techniques that would allow cancers to be detected without the need for biopsies.

"Clearly, being able to tell if tissue is malignant simply from a CT image would be enormously useful," he said.

"There is a wide range of applications covering industrial and medical areas, but my particular interests at present are detecting early signs of osteoporosis, being able to visualise cartilage damage and improving the sensitivity and specificity of mammography."

He is particularly keen to use synchrotron radiation for detecting breast cancer in young women.

"Mammograms tend not to be used in young women because, on a mammogram, cancerous tissue is difficult to detect among young tissue," Professor Lewis said.

"Breast cancer is the single largest killer of women aged 35 to 55 in Australia, so there is a real need to have an imaging technique that works in young women and in women who have a predisposition to the disease."

*Penny Fannin*

## MONASH NEWS

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\* Graduate Destination Survey, Graduate Careers Council of Australia

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