Monash remembers

A tile mural has been unveiled at Monash University in memory of the tragic shooting at the Clayton campus one year ago.

Monash art and design student Ms Katherine Ryan, pictured here with the mural, conceived the idea and managed production of the mural, which is 1.2 meters by 8.5 meters.

"The mural is a symbol of the love felt for those lost, and a celebration of their lives," Ms Ryan said at the unveiling, held on the anniversary of the shootings in which honour economy students Mr. William Wu and Mr. Steven Chan died.

Taking the strain out of the game

Medicine

St Kilda footballers have dramatically reduced their on-field injuries, due to a close collaboration with Monash University researchers.

The university has helped the Saints avoid hamstring injuries – the most common AFL injury – over the last three seasons.

Between 1997 and 2001, hamstring problems caused more games to be missed than any other type of injury across all AFL clubs. However, while the average club faced six new hamstring injuries each season, St Kilda’s losses were reduced to five in 2002 and just two in 2003.

Dr. Paul Percival, research fellow with the Monash Centre for Biomedical Engineering, and Professor Uwe Prokes and Professor David Morgan, from the Department of Physiology, have found it is possible to determine an individual player’s susceptibility to muscle damage, and therefore injury, by measuring the optimal length of their hamstring.

Dr. Percival said muscles are at their weakest when contracted or stretched and at their strongest in between those two extremes. "The muscle length at which this work occurs is the optimal length. The shorter that length, the more vulnerable the player is to damaging their muscle," he said.

The muscles are damaged by repeated eccentric contractions – when a muscle is stretched while active – as long muscle lengths, but the healing process will adapt the muscle to this activity and provide protection from further damage if the activity is repeated.

In light of these findings, St Kilda changed its training programs and introduced a warm up that included more kicking and interval training, as well as more hamstring-specific weight work – all designed to stretch the muscles while under load.

"This Monash research provided clinical evidence to support my own theories about how hamstring injuries occur and how they can be prevented," said St Kilda training manager Mr Chris Jones, who has previously lectured in anatomy and physiology.

Monash research also persuaded the club to adopt its rehabilitation methods for injured players by introducing exercises to restore the hamstring’s optimal length and by building up the player’s running strength.

"As a further safeguard, we conducted on-field tests once an injury was healed to determine a player’s susceptibility to hamstring strain," Dr. Percival said.

"If a risk was identified, rehab would continue for longer before the player was allowed to return to the oval."

Word of their success has spread, with the Saintsaffer with the Monash Centre for Biomedical Engineering.

Measuring the strain: Dr. Percival puts St Kilda footballer Jason Smith through his paces.

New deans for Monash

Monash University has appointed a new dean of Medicine, Nursing and Health Sciences and a new dean of Law.

Professor Byrne, currently director of the Centre for Neuroscience and professor of experimental neurology at the University of Melbourne, has combined an outstanding contribution in basic neurological research with an active clinical career.

He has carried out pioneering research into neuromuscular disorders such as muscular dystrophy and is recognised worldwide for his research into the regulation of muscular degeneration.

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Leading role in film and TV industry for Monash South Africa

The film and television industry in South Africa has received a welcome boost through a new short course unit launched at Monash recently.

The Monash South Africa Film and Television Short Course Unit aims to upskill and re-skil professional working in the film and television industry, by teaching production elements such as management, business skills, accounting, budgeting, scheduling, directing, broadcast commissioning and scripting.

South African specialists and invited Australian industry professionals will teach the courses. More than 60 people attended the launch at the South Africa campus, including course participants, filming and media representatives and members of the South African Film and Television industry. Monash South Africa pro-vice-chancellor Professor John Anderson said the course was an innovative and exciting development for the campus.

Course consultant Dr Melanie Chair said the unit filled a void in film and television education through South Africa. "In South Africa, there are many programs for entry-level study but there is not any that is immediate and advanced study," she said.

"People already in the industry desperately need to upskill and to keep abreast of world trends. To provide these courses, we need to have international expertise to teach, to give global perspectives and to make our industry internationally competitive.

"We are already witnessing international feature films being produced in this country using international expertise, when there is no reason why South Africans could not be doing this. Monash is aiming to address this skills shortage so the professional talent can be sourced from within South Africa."

The short course unit was established by Dr Chair and project manager Ms Nikki Tilley.

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Briefly

MBA scores four out of three

The Monash MBA has been named among the top MBA programs in Australia four times in the past three months.

In August, the program was ranked at the best in Victoria and second in Australia for the annual award business magazine Asia Magazine.

In September, it was ranked in the top band with four Australian MBA programs by the Australian Financial Review, and it received a five-star rating in the graduate management programs section of the 2004 Good Universities Guide.

Hong Kong exchange

Monash has been among a group of postgraduate education institute from the University of Hong Kong who have been invited to improve their English language and teaching skills.

Nottingham University and the Hong Kong University of Science and Technology have been invited to participate.

Science faculty on show

Highlights of the inaugural Faculty of Science Research Your Future evening, held recently at Clayton campus, included the Symposium, developed by project, mathematician Dr Andrew Penrose - the only Australian scientist to be involved in NASA's recent Galileo mission to Jupiter - and a panel of Industry experts.

Monash Science dean Professor Rob Norris said the event, which featured presentations by each of the faculty's six schools, was an outstanding success.

"It was an opportunity to showcase our research across the faculty, in particular to an audience of more than 200 from external business and industry guests."

The event's key objectives were to provide a forum for networking and further advance the collaboration between Monash, industry and research organisations, while promoting the benefits of science research.
**Monash News, October/November 2003**

### Hatching new hope for the big turtles

**Biological Sciences**

Monash University has joined an international crusade to help protect and study some of the world's largest and most endangered turtles. While in the nest, said Mr Cameron Ralph. Overall, only one hatchling in a thousand leatherback turtles - animals that can weigh more than 400 kilos with shells up to 1.5 metres long. His thesis will be supervised by Dr Richard Reina, a lecturer in the School of Biological Sciences, who is a member of the international Costa Rican Leatherback Turtles Research Project. It has been observed that a leatherback is a low hatchling success rate, and Mr Ralph's study will focus on how the hoistage of eggs within the nests affects their development.

**Leatherbacks**

Leatherbacks are such ancient creatures - they go back at least 50 to 60 million years. Leatherbacks are an endangered species. A lot is known about their breeding and nesting biology, but almost nothing is known about what happens to eggs once they've been laid. While there is an annual laying season, individual leatherback turtles only lay eggs every three or four years, in batches of 60 to 80 eggs at a time. They start laying eggs from about 10 years of age. Because their life span can be 30 or 40 years, they may have at most 10 laying periods during their lifetime. Overall, only one hatchling in a thousand makes it to adulthood.

**Turtles in the nest**

"It is extremely important to understand what is going on in the nest and determine what factors influence egg development. The more you know about a species, the more effective a conservation program will be." Leatherback turtles are also found in the waters off South America, Mexico, Malaysia and Western Australia. - Karen Stithenden

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### Bubbles may solve missing ships puzzle

**Mathematics**

Some of history's most intriguing mysteries involving ships lost at sea could now be solved, thanks to the work of two Monash mathematicians.

Professor Joe Monaghan and Mr David May from the School of Mathematical Sciences have been studying what happens when gas bubbles escape through cracks in the ocean floor. While such eruptions are not uncommon, the researchers have calculated that a large one could destabilize a ship. They now believe that a wrecked fishing trawler, recently discovered on the bottom of the North Sea, could have been sunk by a massive bubble of methane.

"It's long been known that there are pools of methane gas, known as methane gas hydrates, beneath the ocean floor that could erupt if they're disturbed or if their internal pressure becomes too large," Professor Monaghan said.

Some surveys of the ocean floor in the North Sea have revealed large quantities of methane hydrates and eruption sites. One such survey in 2000 found the sunken trawler in the Witch's Hole, a particularly large eruption site.

"One theory of how the trawler came to be there is that is lost in buoyancy after bubbles of methane gas were released from an erupting underwater hydrate and carried away," Professor May said.

In the past, numerical computations have been made for bubbles rising to the surface but not for the interaction between a bubble and a floating body.

"Professor Monaghan and Mr May found that as a bubble approaches the surface, a mound of water forms above it. When the layer of water above the bubble has thinned sufficiently, a symmetric pair of troughs develops at either side of the bubble. As the bubble continues to rise, the depth of the trough increases until the bubble ruptures. Through experiments and mathematical simulations, the researchers found that it is possible for a bubble to sink a ship, provided the radius of the bubble is equal to or greater than, the length of the ship's hull. The sinking occurs because a mound of water is raised above the region where the bubble reaches the surface. The flow from the mound creases the deep trough on each side of the mound, and the flow from the mound carries the boat into the trough," Professor Monaghan said.

"Whether or not the ship will sink depends on its position relative to the bubble. If it is far enough from the bubble it is stable, but if it is too close it will sink.

"It's quite possible that the trawler now languishing in Witch's Hole was sunk by a bubble with a radius equal to or bigger than the trawler's hull."

Their research was published in the American Journal of Physics in September.

- Penny Fannin

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### Skier turns to Monash for help in record attempt

**Engineering**

A gold medal-winning skier has turned to aerodynamics experts at Monash University as he seeks to set a new world speed record. Michael Milton, this year's World Cup Snowboarder of the Year with a disability, has turned to aerodynamics experts at Monash in his attempt to go faster. Mr Milton, who won all four gold medals in his class at the Paralympic Winter Games in the United States last year, is aiming to become the first one-legged downhill skier to break the 200 kilometres-an-hour mark. After hearing about the innovations fellow skiers had made in their technique using wind tunnels, he spent a day in Monash's wind tunnel under the supervision of Emeritus Professor Bill Melbourne of the Mechanical Engineering department in the Faculty of Engineering. He wanted to find out which were the best ski poles for me to use and to find a good skiing position that was both aerodynamic and stable," Mr Milton said.

*"Bill and his team were extremely helpful in passing on their knowledge. I learnt a lot about what is and what is not aerodynamic, and I have made changes to my poles which will help me go faster.*

Professor Melbourne said they identified the best downhill position for Mr Milton by measuring the wind drag on him and his equipment while he was in the tunnel.

"He was able to monitor his own performance by watching a camera in front of him during the test and adjust his stance accordingly. He is very determined and very skilled," he said.

"Armred with his new knowledge, the skier, who lost a leg to bone cancer when he was a child, is aiming to make his world record attempt at the French resort of Les Arcs next April.

By coincidence, a Channel Nine news crew was on hand to film the testing at Monash as part of a profile, shown on television recently.

"The public reaction to the program has been great. It really opened the floodgates, with lots of people wanting to get me involved in their events. And it looks like I will have some sponsors logos on my speed suit in future," Mr Milton said.

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### Monash wins $18.8m in ARC funds

Monash researchers have received $3.1 million in funding from the Australian Research Council.

Monash-led research projects have attracted 50 Discovery grants and 14 Linkage grants, awarded to institutions for research involving industry partners.

Researchers in information technology, climate change, environmental science, engineering, history, education, politics, economics and management were successful in obtaining funds.

The latest round is part of a $248 million package announced by the Federal Minister for Education, Science and Training, Dr Brendan Nelson.

Monash vice-chancellor Professor Richard Larkins said this year's result was recognition of the outstanding work being undertaken at Monash.

"This is an excellent result that acknowledges our current research strengths and allows us to grow and develop in a range of new and exciting fields," said Professor Larkins.

A School of Computer Science and Software Engineering project, led by Professor Kevin Jonathon, received a five-year Discovery grant worth $1.5 million to develop more flexible visual interfaces for consumers.

Other Discovery projects that attracted grants include:

- $1 million to a School of Chemistry team led by Professor Douglas Macfarlane for new designs, insights and applications into toxic liquids and solids.
- $900,000 over five years to Dr Peter Junk and Professor Glen Deacon from the School of Chemistry for research in the field of synthetic and structural rare earth chemistry.
- $440,000 over three years to a team from the School of Geography and Environmental Science for a project investigating the sustainable futures of Australian temperate forests.
- Monash received $3.24 million in Linkage grants across a range of faculties for related industry, including:
  - $1.2 million to Dr Jamie Rankin from the Faculty of Veterinary Medicine and Molecular Biology, with an industry partner, for their work on designing drugs to combat cancer and immune-related disorders.
- Monash received $3.24 million in Linkage grants across a range of faculties for related industry, including:
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**Genetics**

The discovery of a novel genetic mutation could improve future treatments for bone diseases and help people affected by a severe form of dwarfism.

Associate Professor Vincent Harley from Prince Henry's Institute and Monash's Department of Medicine, and Associate Professor Eric Vilain from UCLA discovered the mutation in a patient with male appearance.

When the patient's known genetic disease Campomelic DNA was sequenced, a mutation was discovered. Dr Harley said, "In this patient the mutation prevented SOX9 from switching on bone-making genes but didn't affect its ability to switch on testes-making genes. This is an extraordinary finding that shows a type of gene regulation previously not known in the human genome."

We have discovered a mechanism that is hard to explain. The result shows that the same gene can control male development in the testes and female development in the ovaries."

People with CD have a specific form of dwarfism as well as a variation in their sex organs. Typically, 50 per cent of CD patients are genetically male and 50 per cent female but rarely appear female, because the males do not develop in the patient who are genetically male.

But Dr Harley found that genetically male CD patient had an unusual form of CD - abnormally short bones but normal testes and therefore type of gender identity.

In this patient the switch, regulating the function of genes involved in bone development and development of the sex organs, didn't work. "In this patient, the mutation prevented SOX9 from switching on bone-making genes but didn't affect its ability to switch on testes-making genes. This is an extraordinary finding that shows a type of gene regulation previously not known in the human genome."

We have discovered a mechanism by which genes can be controlled separately by the same switch in humans, creating new possibilities for the development of drugs or other treatments for bone disease such as dwarfism," he said.

The finding also explained why some CD patients were both genetically and physically male. "We didn't know why this was occurring, but discovering the mutation in SOX9 and its role on the function of the SOX9 protein has given us an answer. "Patients with CD find it very difficult to lead normal lives."

Bedside manners go hi-tech

**Technology for district nurses:**

By the end of this year, all Melbourne's district nurses will be using mobile computers to collect patient information during home visits, as part of a Monash University research program.

The Royal District Nursing Service will use the wireless technology to download patient information at the start of each working day, during home visits, or at the end of their shifts.

Established in 1883, the RDN is Australia's largest home nursing provider. Every year the organisation's 1,900 nurses and 200 allied health staff coordinate and deliver more than 600,000 hours of care to over 40,000 patients.

Monash IT researcher Dr Helena Schepers said the technology provided nurses with the opportunity to "introduce flexible work practices."

"For example, it is no longer necessary for all staff to begin and complete their working day at one of the RDN's regional offices," she said.

"At each patient visit, the nurse adds information to the patient's electronic record on the tablet PC. They synchronise the data at the office during or at the end of the day, allowing the updated information to be easily accessible to other staff providing care."

"Before the implementation of mobile computers, much of this information was held on paper cards, which we had to be passed on to a nurse in the field, otherwise verbally or via written messages."

"The introduction of the technology is one of several social computing projects in health care being conducted by the School of Information Management and Systems in the Monash Faculty of Information Technology.

"Dr Schepers and her co-researcher, Professor Phillip Steele, intend to conduct follow-up interviews with nurses and patients and observe the mobile computer being used in the home environment."

"We want to identify both successful and unsuccessful strategies employed by nurses, so that changes can be made and introduced into future training plans," Dr Schepers said.

"The aim is to fully integrate the use of mobile computers into the nurses' practice."

- Richard Ewart

**Mission to Saturn:**

Dr Andrew Prentice will spend four months at NASA, fine-tuning his predictions for Saturn. Photo: Greg Ford

**Mathematician to the planets**

A Monash mathematician who made headlines recently through his involvement with the Jupiter space probe Galileo will work at NASA next year in preparation for the mission to Saturn, destined for 2004.

Dr Andrew Prentice, regarded as one of the world's foremost experts on the formation of the solar system, was the only Australian scientist involved with the Jupiter exploration trip.

Many of his mathematical predictions about Jupiter were proved through the Galileo mission, which came to an end when the probe made its programmed crashing into the giant planet's atmosphere on 1 July 2004. He will also be involved in NASA's missions to Mercury and Mars beyond 2004.

A highlight of the Cassini mission will be the spacecraft's encounter with Titan, the only known moon of Saturn, on 22 November 2004. Dr Prentice's theory suggests that Titan is not a native moon of Saturn but instead was captured by the planet soon after Saturn had formed.

Galileo was the first spacecraft to directly measure Jupiter's atmosphere and conduct long-term observations of the Jovian moon system from 1995.

From this new vantage point, the Galileo probe verified many of Dr Prentice's mathematical theories, including the main one that Jupiter and its family of Galilean satellites or moons of Jupiter, Europe, Ganymede and Callisto are a 'showcase example of a miniature solar system.'

"The Galilean system of satellites shows exactly the same trends in physical, chemical and orbital properties as are seen in the planets which orbit the sun," Dr Prentice said.

"Almost certainly, there must be myriad other planetary systems just like ours spread through the cosmos."

- Kevan Stichter

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The textile, clothing and footwear (TCF) sector has been contracting for more than two decades. Tariff reduction has played a central and ongoing role in that contraction, particularly in the area of employment. Between 1996 and 2002 alone, more than 31,000 jobs were shed in the sector — yet still the globalisation train steams on towards free-trade domination.

The question of what happens to such vast numbers of retrenched workers is a vexed one. The Howard government has claimed they are absorbed back into the labour market. However, a recent study of 400 retrenched TCF workers has found that the labour market does not, in fact, care.

The study, by Monash University’s Centre for Work and Society in the Global Era (WAGE), indicated that 46 per cent of those retrenched workers had not found new work after three or more years of unemployment. About 20 per cent of the workers had managed to find only transient casual work, with few, if any, benefits. In regional Victoria, one retrenched worker said: “I work casual now, so there are no holidays and no sick leave — nothing after working all those years.”

Even for the 21 per cent of retrenched workers who did find full-time work, their new jobs — in terms of duties, wages and conditions — were rarely equal to the ones they had lost. The post-retrenchment picture is a far cry from the pre-retrenchment one, where 96 per cent of those workers worked full-time, with some 40 per cent having been in their current job for a decade or more.

So why do these retrenched workers have to struggle so hard to find new jobs? Certainly age matters. The average age at the time of retrenchment was 43, and 68 per cent of the retrenched workers who found new work were below this average age. As another retrenched worker put it: “Once you’re 40, you’re on the heap.”

Not having English as a first language made finding a job more difficult too. A retrenched worker from Warragul put it clearly: “Non-Australian women who don’t speak that much English ... who the hell is going to employ them?”

Many of the retrenched workers in the WAGE study were hindered by a lack of job-search skills — an ironic causality of having a long, stable work history. One retrenched worker in regional Victoria explained: “Why would I even know what a resume is? I just walked into my job 20 years ago.”

For these workers, the absence of any assistance or information from employers or government agencies hit them particularly hard. Many retrenched workers felt abandoned by employers. Some comments included: “I got five minutes notice, they were absolutely disgraceful.” It was a tale and all-too-familiar story. Many of the retrenched workers also told of the frustrations of dealing with Centrelink: “Even if you’re half dead they don’t care as long as you fill in the form right.”

Retrenched workers who did manage to secure assistance from Centrelink faced much harder than those for whom the experience was either too confusing or too demeaning to endure. Disturbingly, only 3 per cent of retrenched workers in the WAGE study reported finding a new job through Centrelink. Even more disturbing was the voice of a retrenched worker who had lost all his superannuation and leave entitlements, only to have a Centrelink officer tell him: “We are not obliged to tell you what your entitlements are.”

And as if these obstacles are not enough, structural barriers are also a problem. The TCF industry is shrinking — some would say dying — and further tariff cuts will add an already dire blow for many struggling companies. TCF workers are highly skilled — but their skills are industry-specific.

One Melbourne man explained: “I have acquired skills over many years, but where do I use them now?”

Clearly, re-training for these retrenched workers should be at the forefront of labour market policy.

The centre has projected an extra cumulative cost to the Federal Government of $3750 million in unemployment benefits between 2004 and 2020. This figure does not include the additional millions that might be incurred from other ongoing welfare payments or costs associated with the frequently reported physical and mental health issues arising from retrenchment and long-term unemployment.

There is little doubt that the pressures of competing against Chinese and South-East Asian manufacturers with no protection will force closure and downsizing for all but the most competitive Australian TCF manufacturers. The responsibility of that reality will then be squarely on the Federal Government to implement appropriate re-training and remove structural barriers to re-employment for retrenched TCF workers — both for the quality of life of thousands of Australians and for the fiscal health of the nation.

Contact: ingrid.nielsen@arts.monash.edu.au
It's time again: new book on Whitlam

Former Australian prime minister Mr Gough Whitlam was special guest speaker at the launch of a new book of essays about the Whitlam era edited by Monash academics Associate Professor Jenny Hocking and Dr Colleen Lewis.

The book was launched by Federal Member for Fremantle Dr Carmen Lawrence at the Readings store in Lygon Street, Carlton.

Dr Strangio's essay, 'Whitlam vs Carron: Colliding Visions of Labor', revisits the relationship between Gough Whitlam and Dr Jim Cairns and their different visions for the Labor Party.

Professor Margison's essay discusses Mr Whitlam's commitment to education, arguing that his capacity to universalise and mobilise popular aspirations for education played a key part in Labor's electoral gains in 1969 and 1972.

According to Associate Professor Hocking and Dr Lewis, no dismiss interest in Whitlam and 'Whitlamism' as mere nostalgia "fails to recognise that it is not a yearning for the past but a concern for the present".

"Voters feel unable to influence the policy process and are bemused by the cynicism of both major parties which focus on polls and not persuasion."

In his essay, 'The Relevance of the Whitlam Government Today', Gough Whitlam concludes that contemporary policies "creatively mobilising the resources of the Labor Party, the Parliament, the Constitutions and the United Nations will speed the day when the men and women of Australia will proclaim once again: It's Time!"
A model of classroom support

The young teacher stands in front of his first class for the new year. She is teaching Japanese language in a Melbourne high school for the first time. She has only been in Australia for one month, and in that time she has had to navigate cultural accommodation, acclimatise to her new work surroundings and prepare to teach her language to a group of Asian teens. While it is a daunting task by any standard, this scenario is not uncommon. Faced with this situation, many teachers are calling on the resources of Monash, University of Melbourne's Centre for Japanese Language Education.

Established in 1995 with the aid of a $2 million endowment from the Nagato Foundation, the centre provides programs and activities for teachers of Japanese in South Australia, Tasmania and Victoria. Since its establishment, the centre has helped dozens of teachers. Ms Miyuki Manzai, a Diploma of Education Graduate from Monash, is one of them.

"I had a difficult time teaching in my first term at a new school, but being able to hear about other teachers' experiences and talk about my problems was extremely encouraging," she said. She first came into contact with the centre during her university studies but has maintained her links since taking up her first full-time teaching post at St. Leonards College in Melbourne.

Based at Monash's Clayton campus, the centre is run by director Ms Anne De Kretser and administrative assistant Ms Keiko Kagawa. They actively support teachers who call on them for advice. "We are ready to answer their questions at any time. We run discussion groups to help teachers with issues such as report writing and parent-teacher interviews," Ms de Kretser said.

The centre's activities also complement existing secondary school texts, recently producing a free CD pack for senior secondary students. "It provides excellent professional development options for teachers of Japanese in South Australia," Ms de Kretser said.

Japanese teachers are calling on the support of the centre to help them with their teaching society. "It was extremely helpful to us," said Ms Susan Hodgson, the association's Development Officer for teachers of Japanese in South Australia. "We run seminars for the teachers, but we also visit schools and help them with their teaching plans to ensure they are following the guidelines and providing students with the experience they need," she said. "We review what we do every year, and the professional development programs we run are updated annually to meet the changing needs of the teachers.

Japanese currently ranks second in popularity only to French at VCE level, so the centre's role in providing classroom support and materials is likely to remain vital. Contact: anne.dekretser@arts.monash.edu.au Ph: +61 3 9905 2313

Small business needs to hire right—not fire

Small Business

A Monash University academic has suggested that businesses should not be given the ability to summarily sack new employees within their first year on the job.

Currently, the Federal Government is seeking to exempt Australian businesses with fewer than 20 employees from the unfair dismissal provisions of the Commonwealth Workplace Relations Act 1996. Dr Rosena Bartlett, director of Monash's Family and Small Business Research Unit, has challenged the bill, saying that small businesses will create more jobs in the small business sector.

"I question how eroding the rights of workers in small business will encourage people to work in this sector," she said. "If we don't know exactly who we are dealing with, then we won't know what they really need. If we get it wrong, we can cause more problems than we're trying to fix, and we can waste taxpayers' money in the process.

Dr Bartlett said small businesses are described as the 'engine room' of the national economy, because 96 per cent of Australian businesses employ fewer than 20 employees.

"They are important to rural and regional Australia. In Geelong alone, 80 per cent of employees have fewer than five employees."

The author argued that the distinction between fantasy and reality, between truth and its interpretation, is blurred, that every photographic truth is an interpretation and that this interpretation is driven by the desire of the observer, the subject being photographed and the viewer looking on.

Monash community and have a publication record of significance and are committed to ongoing research. The postdoctoral position is preferably suited to a highly motivated and self-motivated individual with a broad background in bioinformatics. In particular, the successful candidate is expected to engage in collaborative research and to publish their findings in high-impact journals. Applications from candidates with a strong background in bioinformatics and genomics or related fields are particularly encouraged. The position is for a fixed term of two years, with the possibility of extension. Applications are invited from qualified candidates who hold a PhD in bioinformatics or a closely related field. The successful candidate will be expected to develop a research program that builds on the existing strengths of the lab and contributes to its overall research goals. The position is based in the Department of Cell and Molecular Biology at Monash University and will provide an opportunity to interact with a diverse and interdisciplinary group of researchers. Application deadline: 28 February 2023. Contact: Dr. Jane Smith, email: jane.smith@monash.edu. Tel: +61 3 9905 2313

Single & Free Female Migration to Australia 1833–1837

By Elizabeth Rushen, Published by Australian Scholarly Publishing RRP: $99.95

Single & Free During the 1830s, nearly 3000 women emigrated to the Australian colonies under a scheme administered by the London Emigration Committee. The enigmatic emigrants responsible for administering this scheme were condemned for their selection process in what was seen as a plot to transplant immoral women and the infamous criminals and charlatans to the colonies. Visited interests in rigid interpretations of class and gender combined to create a myth about the presumed unsuitability of the women in a discourse that represented female emigrants as pauper prostitutes. This book describes the scheme and the many women who emigrated from Britain and Ireland. Their selection interviews, the experiences and setbacks they were drawn from a wide cross-section of 19th-century society. It challenges those who disparaged the women – while they travelled these women were drawn in by a range of motives and was not dismissed as 'sweeps of the gutter'. They were, in fact, bold and enterprising and made vital workers and wives in the new colonies.

Dr Rath is a history honorary research fellow in the Department of History in the Faculty of Arts at Monash University and executive director of the Royal Historical Society of Victoria.

The Darkroom

Photography and the Theatre of Desire

By Anne Marsh. Published by Australian Scholarly Publishing

This book describes photography as both a surveillance mechanism and an instrument for the construction of a gendered society – a tool in the service of science and a major component of the entertainment industry. In between these two categories are a host of other practices jostling for recognition. The author argues that the distinction between fantasy and reality, between truth and its interpretation, is blurred, that every photographic truth is an interpretation and that this interpretation is driven by the desire of the observer, the subject being photographed and the viewer looking on.

Dr Anne Marsh is a senior lecturer in visual culture in the School of Library, Visual and Performing Studies at Monash University.
A cashless world where you no longer have to reach into your purse or your wallet for coins to buy a sandwich or newspaper may not be too far away. Researchers in the School of Computer Science and Software Engineering in the IT faculty at Monash University are working on a system with the potential to allow electrical cash transactions using a variety of electronic devices including mobile phones.

"My aim is developing a method of making micro-payments, that would allow people to buy small-value goods or services on wireless networks using tokens that represent coins," said head Professor Bala Srinivasan. "Downloading ring tones and making micro-payments are clear examples of wireless micro-payments that already happen, but our system goes much further."

"The scheme would be stored in a smart card plugged into a mobile device, which has wireless connectivity. For mobile phones, the tokens can be stored in SIM cards. The holder would be able to change up their card with any amount they choose on a daily or weekly basis from their own bank account."

After each charge, they would be given a personal identification number so they could confirm their identity each time they made a purchase.

The researchers plan to build extra security into the system by having the banks encrypt access numbers, while merchants providing facilities for wireless transactions would get their payments by cashing in tokens electronically at the end of each day's trading. "Our devices would be better than existing smart cards because if you lose one of those, you lose the cash stored on it," Professor Bala said.

"Under this system, a lost or stolen card would be useless to anyone else, and stranded amounts would revert to the cardholder's bank account."

The project is currently at the stage of mathematical computer simulations, and the Monash team needs to investigate compatibility and performance issues such as the speed as which messages could be transmitted. Their aim is to complete the research by the middle of next year and then test the system by establishing a small wireless network at the university's Clayton campus so staff and students could experiment with virtual dollars.

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The University of Arizona's Professor John Olsen has put a lot about how our early human ancestors lived in the high, arid plains of Tibet and Mongolia using evidence as subtle as small chips of stone left behind by nomadic hunter-gatherers around 15,000 years ago.

In a recent public lecture at Monash, the anthropologist and East Asian studies professor visited his audience with stories of research into Ice Age life in some of the world's highest and driest places, Tibet. The search for human ancestors on the roof of the world of archaeological explorations in Tibet and Mongolia, the illustrated presentation focused on some of Professor Olsen's most fascinating discoveries and their possible meanings.

"Quite often I'm crawling around on any hands and knees looking for tiny pieces of stone, which provide evidence of making and using tools that people were living in the area," Professor Olsen said. "It was particularly revealing to come across a typical hot spring in Tibet with a collection of stone tools arranged around the well — evidence of what could be a large-scale and possible activities.

The tools could have been used to help animals, further deep or process hides, strongly suggesting the site was a hunting camp."

"It's possible the early humans, who left the tools behind up to 15,000 years ago, could have been a nomadic band."

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The chemical balances used to weigh gold in the heady days of Australia's gold rushes are being sought by a Monash University researcher.

Mrs Nicola Williams, an honorary senior lecturer in the School of Chemistry, has spent time over the past 20 years collecting antique scientific instruments and glassware. Her main interest is glass — chemical and balance flasks, particularly those that were imported into Australia in the early days of the gold rushes.

"The historical importance because they were used by assayers on the goldfields to weigh the gold that was brought in by prospectors," said the owner of the Miners' Hall of Fame in Kalgoorlie, Western Australia — is the only known survivor of just 45 that were produced between 1857 and 1940. "Mostly the balances are in good condition. They all have a serial number and other information can be found from pencil markings in the grooves of the sliding door, and on the surface of drawers or drawer carriers," Mrs Williams said.

"From a combination of serial number and careful copies of all the markings, my UK collaborators can work out the date a balance was made, when it was repaired, and even the names of the workshop involved. I can then pass all this fascinating background information back to the museums."

The old balances have now been replaced by electronic balances, but they are an important part of our mining history and the workmanship is remarkable. One balance I found, at a mining museum in Charters Towers, is a very early model Oertling made between 1854 and 1860. The pan chains are made of pure platinum, and the pans are made of copper, placed with platinum on the upper surface. Another of these early-model 50s is held in the Physics museum at the University of Queensland."

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Life on top of the world
15,000 years ago

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Aboriginals of the Northern Territory

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Researching virtual cash:
(from left) Dr Phu Duong Le, Professor Bala Srinivasan (standing with student Mr Jingjian Yang), Ms Osama Daryesh and Ms Boo Yoon Sunny Toh (seated).

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