

# MONTAGE

NEWS FROM THE CAMPUSES OF MONASH UNIVERSITY

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# State forensic unit moves to Monash

Plans are under way to merge Victoria Police's Office of Forensic Medicine with the Department of Forensic Medicine at Monash, the first such arrangement of its kind in Australia.

After the resignation of several medical staff from the police forensic office, a recent meeting between the office and Victoria Police recommended integration into the Monash department.

The acting director of the Department of Forensic Medicine at Monash, Associate Professor David Ranson, said the increasing workload of the police forensic medical staff, the demand placed on them by the courts and legal profession and the need for research and teaching prompted the merger and rationalisation of services.

"The building of the police forensic medicine into a university structure in a formal,

organisational way will be a first in Australia," he said. "In a sense, the merger formalises an arrangement that already exists, because the department works very closely on a day-to-day basis with the police forensic medical office."

The dean of the Faculty of Medicine, Professor Robert Porter, endorsed the amalgamation plans, which extend earlier proposals for formal affiliations. He welcomed closer links between Monash and Victoria Police.

"In addition to providing the state with clinical forensic medical services, a police forensic medicine unit will provide for education of future medical practitioners, police and the community," he said.

"All resources and facilities of the faculty will be available to support training, research and professional development, not



Photographic evidence: just one of the tasks undertaken by forensic researchers.

just for police doctors, but for the police force generally, emergency services and social workers."

Dr Ranson said the university and the state police were forming a working party that would carry out a review of costing and forensic medical service delivery. The necessary resources for the service would also be transferred to Monash.

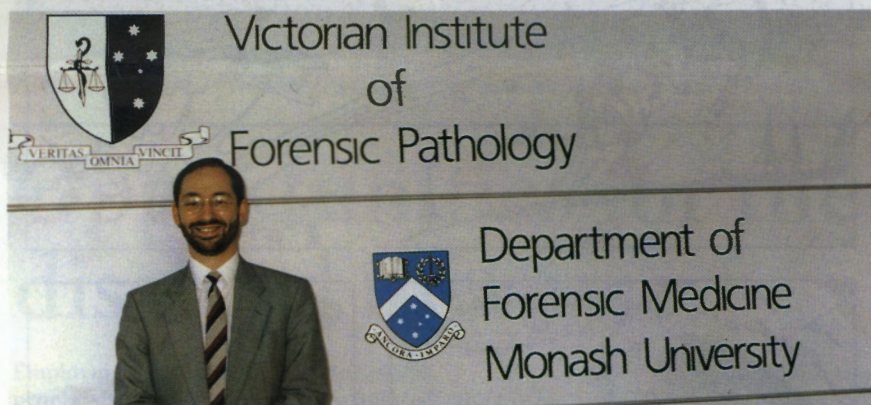
"About 18 months ago, an independent report identified the police Office of Forensic Medicine as a world class institution with a high level of service," he said. "I am now attempting to implement the merger of this office and the Department of Forensic

Medicine," Dr Ranson said. "We hope that the details of the merger will be completed by July."

Dr Ranson said the focus will be on the integration of specialist clinical forensic medical practitioners into an operational unit, which will also have teaching and research functions.

He said the merger will allow for greater research opportunities, increase undergraduate and postgraduate courses in forensic medicine, provide training programs and offer structured career paths for forensic experts.

BY VICKY ANDERSON



Associate Professor David Ranson: "The merger of Victoria Police's forensic office with Monash will be completed by July."

# Designs on the future

A Monash undergraduate has won one of the world's most prestigious graphic design competitions for students.

Ms Eun-Ah Maria Lee's design was selected ahead of 226 other entries from 62 international design schools.

Her winning entry featured on the front cover of *Print* magazine, a New York journal that is read by graphic artists around the world.

"The idea was to create an image that looked at what graphic design is and how I interpret it," Ms Lee said.

"I wanted my design to focus on objects related to graphic design and to reflect the importance of generating ideas. When I looked at the basic tool for graphic design – an ellipse template – it looked just like thought balloons in the comics."

*Print's* art director and one of the judges, Mr Andrew Kner, said of Ms Lee's design:

"To see an oval template as a thought balloon is very witty."

Ms Lee, who says she can "get an idea from any object in the world", believes her multicultural background has helped her as a designer.

The Korean student says that having two different reference systems and cultures to draw on really helps her come up with interesting concepts.

Eventually, Ms Lee hopes to return to Korea to teach graphic design, but for now she has her sights set on completing honours in the Department of Graphic Design.

Another Monash student, Mr Chris Liem, placed third in the same competition.

Graphic designer Mr Russell Kennedy said the awards were a "major achievement for Australian designers while also adding support to Monash in its quest for recognition as one of the world's great design institutes".



Ms Eun-Ah Maria Lee's award-winning design will be seen by graphic artists around the world.



## NOW & THEN

### 25 YEARS AGO

In a paper written by Professor G. M. Badger, Vice Chancellor of the University of Adelaide, 30 years ago the great majority of students were Australian born, or at least were British born, and a student from a foreign country was a rare exception.

Today very many students are from Britain or the Continent; and in addition, there are some thousands of students from the countries of South-East Asia. The influence of these South-East Asian students on the university scene has been enormous. The Australian-born students have acquired a wider interest in the world, and the South-East Asian

students have returned to their homelands with new knowledge and skills and, in most cases, with some affection for Australia.

### 15 YEARS AGO

In its approach to the role of universities, the Williams Committee drew upon four "precepts of long-standing", which, it said, had influenced the advice given to successive governments by the Australian Universities Commission and, later by the Tertiary Education Commission.

These included:

- That every young person of appropriate ability who desires a university education should have a fair chance of getting in.

- That universities could not be efficient and economical with less than 4000 students in those providing courses in the humanities, sciences and social sciences, or less than 8000 when courses were also provided in medicine, dentistry, veterinary science, agriculture and engineering.

### 5 YEARS AGO

A worldwide audience will soon be able to view several historically important Indonesian films as a result of a subtitling project by two Monash academics, Dr David Hanan (Visual Arts) and Basoeeki Koesasi (Indonesian and Chinese Studies).

The films represent the birth of the country's indigenous cinema and are regarded as among the most important surviving works produced in the early years of independence.

Most were made during the Sukarno period and have never been shown abroad.

### THIS MONTH LAST YEAR

A new one-shot livestock vaccination system could save Australia's grazing industries millions of dollars a year.

The system – developed by the Victorian College of Pharmacy (VCP) and the CSL (formerly Commonwealth Serum Laboratories) Veterinary Division – delivers both the primary and booster shots in one injection, but a delayed-release implant ensures that the booster's payload is not released until 30 days later.

The new technology will avoid the substantial costs involved in mustering animals a second time to complete a course of conventional liquid vaccines, especially on the large stations.

## Study and health linked: Open Learning student

An elderly student recently argued that Monash University's Open Learning program could help reduce the nation's health care bill.

"I am an 85-year-old suffering from severe arthritis which prevents me from playing golf, my favourite pastime.

I could wither on the vine or do what many of my friends do and haunt the doctor and swallow tons of expensive pills. Instead I am attempting a business degree and rarely go to the doctor and never take pills.

The course stops me from brooding and I never have time to feel sorry for myself. My wife, 67, is taking a Word Perfect course as we have just bought a computer and printer.

My point is that an interest like obtaining a degree excludes a lot of imagined problems.

Medicare costs the nation \$33 billion against federal revenue of \$100 billion and a lot of this cost is apparently attributable to the elderly. Give them an interest like obtaining a degree and their medical costs to the community would drop considerably.

I personally hold three financial fellowships, but like the majority of my contemporaries I never had the opportunity of obtaining a degree until now.

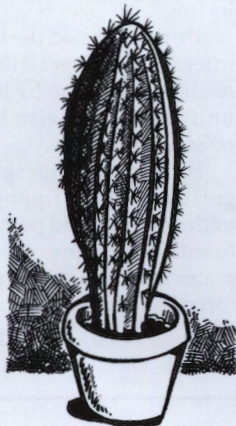
Elderly people fear exams, so I suggest granting degrees by assessment alone. This [exams] could have a downward impact on health care.

Anyway, I congratulate all those on Open Learning and respect all their efforts."

## Paw vs Claw



## THE SPIKE



### The Autumn Prime Beefs Awards

- The Wreck Hall Award for Taking the Gloss off the Start of a New Year goes to the builders on Clayton campus who began resurfacing three courts in the rec hall on the first day of term.

- The Waste Not Whoops Forgot My Principles Award for Papering over the Philosophical Cracks goes to the person who kindly sent us a sheet of tips on how to reduce waste paper in the office, attached to which was a post-it note bearing the name of the addressee.

- The Thumbs Down Award for Maintaining Not Quite a Sign of the Times goes to the ageing and increasingly unfashionable hitch-hiking stand on Clayton campus.

...

Flying these days seems to have lost a little more than its magic.

Engineering's associate dean of research and development, Professor Brian Cherry, beat the best Boeing could offer when he travelled down to Tasmania recently for the opening of the new Australian Maritime Engineering Cooperative Research Centre.

Professor Cherry mooched southward in his 34-foot Magpie class yacht, taking a leisurely 36 hours or so. Other guests invited to the bash chose to fly.

Professor Cherry beat all-comers by a short half-headsail, which proves once again that he who luffs last laughs best.

## Letter to the editor

I refer to the article on Dr Chris Sharpley's survey on Stress and Health at Monash published in Montage in March 1994.

I refer, in particular, to the comparative statistics which he suggests show that Gippsland staff "had slightly higher levels of anxiety, daily hassles and job stress than other campuses". There are two comments which I would wish to make.

This first is that the questionnaire was sent to members of staff during the first semester of 1993. This was a period of considerable change at this campus which had amalgamated with Monash to become Monash University College Gippsland on 1 July 1990 and which then became a campus of the university from 1 January 1993. New relationships were evolving at all levels of campus

operations. The Pro Vice-Chancellor of the University College, and Director of the former Gippsland Institute of Advanced Education (Professor Tom Kennedy) had also retired at the end of 1992 and arrangements were in place seeking a new appointee to the position of Pro Vice-Chancellor (Gippsland).

The second point which should be considered is the degree to which the Gippsland staff had these "slightly higher levels of anxiety" etc. Dr Sharpley states on page 10 of his report that "none of these differences were statistically significant."

I suggest that any slightly higher levels of anxiety, if they did indeed exist, reflected only a temporary situation now no longer evident.

Mr George Joyce, Director, Administration, Gippsland campus.

## MONTAGE

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# Sifting through our polluted waterways

If a team of dedicated Australian scientists have their way, no longer will some Australian rivers be described as proverbial running jokes.

The new Cooperative Research Centre (CRC) for Freshwater Ecology, a tributary of which will be based on Caulfield campus, aims to help reduce water pollution and improve the management of our freshwater resources.

The deputy director of the CRC for Freshwater Ecology and head of the Water Studies Centre at Monash, Professor Barry Hart, believes the centre's research program will boost water management.

"This CRC brings together universities, CSIRO, government and industry in a partnership that will provide mutual benefit," Professor Hart said.

The CRC for Freshwater Ecology is a collaborative venture between Monash, CSIRO, Melbourne Water, the Murray-Darling Basin Commission, the Murray Darling Freshwater Research Centre, NSW Fisheries, University of Canberra, ACT

Electricity and Water, La Trobe University, the Rural Water Corporation, the ACT Government, the Albury Wodonga Development Corporation, and the Sydney Water Board.

"The past four or five years have seen major changes occurring in Australia's water industry," Professor Hart said. "Particularly relevant is the much greater emphasis on water quality and the focus on protecting the ecological health of water bodies."

The CRC for Freshwater Ecology will aim to improve the ecological information needed to better manage Australia's rivers and water resources. Its six current research programs cover flowing waters, eutrophication (increasing the level of nutrients in water), floodplain and wetland ecology, water quality and ecological assessment, fish ecology and urban water management.

Operating on an annual budget of \$5.5 million, which also includes an annual \$2 million grant from the Federal Government and in-kind contributions, the CRC will

provide an ecological guide for sustainable management of surface water.

Professor Hart said the centre would achieve its objectives through research, education and technology transfer. "The challenge will be to achieve a mix of long and short-term research, which should include a range of low and high-risk research investigations," he said.

"The CRC brings together a unique mix of scientific expertise, and it will have laboratories and field facilities in Victoria, (located at Monash's Clayton and Caulfield campuses and at Melbourne Water), Canberra and NSW (Cronulla, Narranderra)."

A total of 51 CRCs have been established so far, with another 10 centres to be funded in the fourth round of grants later this year. Under the CRC structure, Federal Government funding is guaranteed for seven years. There are now seven 'environmental' CRCs.

Professor Hart believes the CRCs are a very pro-active way of bringing together industry, government and academia.



"Our board chairman, Dr John Langford, likens the CRC to a 'one-stop-shop'," he said. "In the past, if industry sought information on river flows, for example, they would have to talk to five or six individual research groups and mould those groups into a team. They now have the option of using the resources and expertise of the CRC."

"In seven years time, we want to have served the water industry so well that it will not want to lose our services – therefore, success and continuity are vital."

# Tangled up in Bob Solving those burning questions

The New York cop summed up his predicament in just a couple of sentences: "People say I'm crazy to like Bob Dylan," he confessed to mathematics lecturer Dr John Lattanzio. "Is there something wrong with me?"

A Dylanophile for almost 20 years, Dr Lattanzio's reply was an emphatic "no". To underline his admiration for the work of the singer-songwriter, last month Dr Lattanzio co-organised Melbourne's first Bob Dylan convention.

Held over a weekend at the Prince of Wales Hotel in St Kilda, the convention attracted more than 200 people. Not all of them, however, were hard-core Dylan fans.

"Most Dylan fans are men, so in a way it was reassuring to hear one woman at the convention say that her husband didn't understand him," Dr Lattanzio said.

The convention, the second in Australia, followed an international trend. "The idea started in England in the early 1980s, when a couple of music journalists began a Bob Dylan information service," Dr Lattanzio said.

"Dylan had been out of the press for several years, hadn't released many albums, and those that he had were not very well received."

The problem facing organisers of the Melbourne convention was deciding who to leave off the speakers list. "About half a dozen Dylan experts from overseas wanted to take part," Dr Lattanzio said.

Topics covered included Dylan's background in folk, his notion of freedom and responsibility, and the famous Basement Tapes, recorded in the mid-1960s with The Band.



Melbourne poet Adrian Rawlins waded in with his own reminiscences of the time he escorted Dylan around Melbourne during a 1966 tour. Dylan, it turned out, was disappointed by Melbourne's slums.

Dr Lattanzio's own conversion occurred in 1975, when the album 'Blood on the Tracks' was released. "I owned two Dylan albums up until then, neither of which I really understood. But I had never heard anything like 'Blood on the Tracks' – it was unbelievably intense and honest."

Dylan, it seemed, was a little more ambivalent. When asked to explain the popularity of his new album, he replied: "How can you like something with so much pain in it?"

Dr Lattanzio lectures in stellar structure and star formation, so he knows a thing or two about celestial phenomena (his collection of Dylan tapes alone is astronomical – he has more than 1000).

"Dylan is unrelentingly driven – he sets himself very high standards. One of the speakers at the convention – an Australian academic – describes him as America's greatest living poet."

Dr Lattanzio actually met Dylan once. It was on Zuma Beach in California about three years ago.

However, to Dr Lattanzio the messages in Dylan's music are more important than the man himself.

"Listening to Dylan is often a very lonely thing, but he connects with you in a very important way," he explained.

"His music bothers me. But I enjoy being bothered. The purpose of art is to keep kicking us in the butt when we think we've got things sorted out."

Scalds from tea and coffee are the most common form of injury sustained by toddlers, according to data collected by Monash University's Victorian Injury Surveillance System (VISS).

As a result of this finding, which VISS director Dr Joan Ozanne-Smith says is a major concern, the group recommends the introduction of a new spill-resistant hot beverage cup.

The VISS is currently seeking a designer to develop a spill-resistant mug suitable for the Australian market.

"We have based our recommendation on an American design formulated for those people who drink hot beverages while driving," Dr Ozanne-Smith said.

"The idea is to create a design that can be sold as a gift to give to new parents and those who are constantly around toddlers."

Dr Ozanne-Smith was confident the spill-resistant cup would be a successful concept because of its virtual guarantee of reducing spillage.

The finding and proposed solution are good examples of the work carried out by VISS.

"Our major concern is that the environment is made safer so that the likelihood of injury is minimised," she said.

Linked to the Accident Research Centre, VISS has been collecting data from hospital

emergency departments since 1988, and now has a database of more than 150 cases, including many different types of injuries and poisonings.

VISS works closely with relevant organisations such as the Health Department, and makes recommendations on national and state injury prevention strategies.

VISS also publishes the quarterly journal *Hazard*, which details survey results of particular injury types, supplies statistics and offers solutions for prevention.

Dr Ozanne-Smith said the publication covered a range of topics, including work-related and sports injuries and burns.

"One of our major thrusts is in design solutions for the hazards that cause injuries rather than preventive education alone," she said.

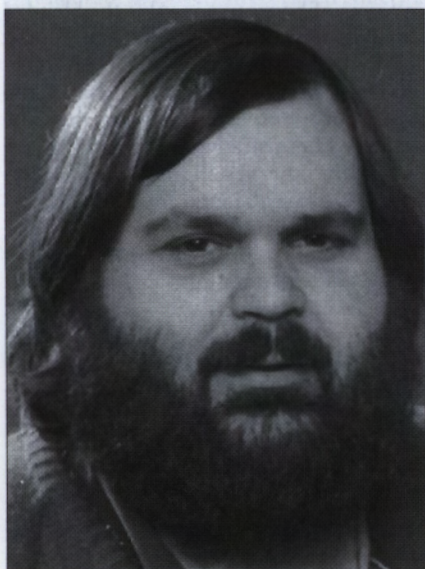
According to Dr Ozanne-Smith, tangible solutions for prevention are unquestionably the best option, and she cites the introduction of the smoke detector as evidence for this approach.

"There has been a notable decrease in the number of fire injuries as a result of smoke detectors in the home," she said.

"At the end of 1992 only 33 per cent of homes had smoke detectors. This has now increased to 66 per cent in some municipalities, and as a result we expect to see a decrease in fire injuries."



VISS director Dr Joan Ozanne-Smith with a prototype of the American 'spill-free' hot beverage cup.



Dylanophile: Dr John Lattanzio.

BY JOHN CLARK



# Managing with briefcase and child

*In 1994 – the Year of the Family – the lines between family and work are blurring. More than half of all Australian families with dependent children have both parents in full-time employment. This report by Susanne Hatherley, marketing manager in the Office of University Development and Joshua's mum.*

I have just returned to work with my briefcase under one arm and five-month-old baby under the other. I am a 'worker with family responsibilities'.

Forty per cent of the Australian workforce performs this precarious juggling act, and our ranks are growing. According to trend-readers and economists, the labour force of the 1990s will be dominated by employees who share at least some responsibility for the care of family dependents. Predictions are that there will be an increase in the number of dual-earner families, more single-parent families, a greater proportion of working women with children, more men with direct responsibility for family care, and growing numbers of workers caring for elderly parents.



Ms Susan Chao nurses three-month old Milovan Vukcevic.

In recognition of this significant social change, the Federal Government recently ratified the International Labour Organisation Convention 156 on Workers with Family Responsibilities. It is now national policy "to enable workers with family responsibilities who are employed or wish to be employed to do so without discrimination and, as far as possible, without conflict between their employment and family responsibilities".

The message is clear – employers need to be family friendly. As any working parent will know, the big issues are:

- finding appropriate childcare during the day, before and after school and during school holidays;
- taking care of sick children;
- access to permanent part-time work; and
- more flexible working hours.

Monash recently made a further commitment to providing accessible childcare facilities for staff and students when it contributed \$150,000 to the new Monash Student Creche Co-operative in Beddoe Avenue, adjoining the Clayton campus. The creche was established in 1968 by student parents and the university Union. Four children were looked after by one carer. Today about 100 children attend the creche, with 12 childcare staff offering an education and care program.

The new premises, funded by the university, the university Union and the creche,

opened in October last year, and provides three rooms for children under the age of three, three rooms for children over three, a sleep room for babies, three bathrooms and three large outdoor play areas.

However, head of Child and Family Services at Clayton, Ms Bernadette Brown, is quick to point out that demand for care still exceeds the number of places available, particularly for babies. Working parents also need occasional care, after-school care, holiday care and care for their sick children.

Ms Bernadette Brown and her counterparts on the Caulfield and Peninsula campuses, Ms Sue Boggan and Ms Ann Garden, are much more than childcare coordinators. They have also been involved in advising government on legislation for workers with family responsibilities, as well as developing policy for the university, and counselling students on how to balance studying and parenting.

The counselling and advocacy work are considered as crucial as campaigning for improved and flexible childcare options on campus.

"Parents, whether they are working or studying, need support and sensible advice," Ms Garden, an experienced family therapist, said. "Our work goes beyond providing a directory of childcare services. Often we are called on to advise on issues ranging from how to share the housework to how to deal with divorce."

**"Parents, whether they are working or studying, need support and sensible advice."**

In addition, the crusade for improved facilities for working and studying parents and their children continues. Currently, Child and Family Services representatives are developing services agreements with the Monash-linked childcare centres, the Monash Student Creche Cooperative Limited, the Monash Community Family Cooperative, the Chisholm Child Care Association and the Monash (Frankston) Community Child Care Centre Inc. The ser-



Monash student Ms Rashmi Dutta with 2½-year old Nisha.



Monash childcare provides a close-knit community for kids. Pictured (from left) are Imogen Russel, Emma Jenkins, Hye-min Chang, Nancy Chen, Michael Faka and Natalie Ramsellar.

vices agreements will formalise relationships between the campuses and centres.

Most recently, Ms Boggan has established an occasional care centre on the Caulfield campus. It opened last month to the relief of many parents on campus. At the moment, there is limited funding for the centre and Ms Boggan has supplied all the equipment from her own pocket. However, she is encouraged by the growing awareness of the need for this type of service.

"At least there has been a recognition of the need for an occasional care centre on the campus," she said. "This is the first step towards providing adequate childcare places for staff and students with children."

Ms Brown believes the university needs to go further. She has made a submission to the Department of Human Services and Health for a multipurpose facility on the Clayton campus. A similar submission has been made on behalf of the Caulfield campus.

"Such a facility would provide a new venue for the occasional care centre, day care, permanent part-time care and the school holiday program," she explained.

Equal opportunity manager, Dr Margaret James, describes the school holiday program as "one of the best things I have ever been involved with".

Initiated six years ago by Ms Brown, the 90-place program now operates throughout the school holidays, offering children aged from five to 14 a range of activities. The result is happy children – and happy parents.

Ms Kaye Quittner, sub-editor in the Office of University Development and mother of Ben, 9, and Nicole, 7, says it is very comforting to know the children are not far away.

"They feel very special coming to mum's workplace during the holidays," she added.

"It is a very professional and well-organised program offering a variety of activities. Most importantly, it means I can spend time with the kids at lunchtime."

Although Dr James believes Monash has "done fairly well on the whole" for employees with dependents, she points to a number of issues that still need to be resolved.

"What happens when a child is sick? This always creates an emotional strain," she said.

An Australian Institute of Family Studies survey of 2642 families illustrates this dilemma. As one parent said, speaking for many: "I just want to be able to say that my child is sick and that I need time to take care of her." The survey found that more than half the mothers and one-third of the fathers had taken time off work to care for sick children in the past year. They'd taken either sick leave or annual leave. Twenty-nine per cent never told their boss the real reason and 13 per cent sometimes told.

At present, Monash offers a special leave provision of three days in the event of a family member's serious illness.

Dr James points out that the issue is not so much the seriousness of the illness but the dependency of the family member.

"If your baby has a cold and wants his mum, then there aren't many alternatives except staying home. Childcare centres are not set up to cope with sick and infectious children," she said.

The Equal Opportunity Unit is also looking closely at the issue of flexible hours. Part-time work, career breaks, paternity leave, job-sharing and working from home are all options being investigated.

Most recently, Monash University Council approved the Equal Opportunity Committee's recommendation that maternity leave for women should be extended to allow a male staff member to take up to 12 months unpaid parental leave to care for a young child.

"This amendment recognises the importance of the father's parenting role," Dr James explains.

More controversial – although slowly gaining acceptance in the business sector – are schemes such as job-sharing and the 48/52 year.

As equal opportunity project officer Ms Renata Singer points out in her report to the Monash Equal Opportunity Committee Affirmative Action Working Party, job-sharing is currently mainly rhetoric rather than reality, although some companies, such as the Commonwealth Bank, the National Australia Bank, Westpac, IBM, Shell and Hewlett Packard, have introduced job-share arrangements.

Ms Singer believes job-sharing offers the possibility of getting dual expertise and attracting and retaining staff at all levels who have other interests or responsibilities.

One example of the theory being successfully put into practice is the job-share arrangement between Dr Miriam Tisher and Dr Livia Jackson, joint coordinators of Community Services at Caulfield.

Dr Tisher is convinced that the university gets more from job-sharing than it pays for in terms of hours put in, plus the blended expertise from different professional areas.

"In any job-share, people bring different styles to the job as well as skills," she said. "For example, one person might be better at administrative details and budgeting and the other at staff support and supervision. We haven't found any disadvantages at all in job-sharing, only advantages."

Ms Singer has proposed a faculty-based pilot project to monitor the results of job-share arrangements.

The 48/52 scheme, introduced to the Victorian Public Service in 1991, allows employees to take an extra four weeks annual leave. In return for this convenience, particularly useful for parents of school-aged children, employees are paid at a slightly reduced rate. The reduced rate is calculated by subtracting four weeks pay

*Continued page 5*



# Nothing beats a healthy lifestyle

The majority of people supplementing their diet with vitamins may be risking their health rather than helping it, according to Monash nutrition expert Professor Mark Wahlqvist.

Professor Wahlqvist, head of the Department of Medicine at Monash Medical Centre, says about one-fifth of the Australian population use vitamins and that number increases to one-third if you include herbal preparations and dietary fibre supplements.

"The most prominent vitamin user is the person with health-seeking behaviour," Professor Wahlqvist explains.

"This type of person wants to improve their health and is interested in new ideas and possibilities. They are the people least at risk of vitamin deficiency in our society, but they put themselves at greater health risk because of their willingness to experiment."

The most common type of user falls within this 'healthy' category – those with an

adequate diet, watching their fat intake and eating foods from the five food groups.

Professor Wahlqvist says vitamin abusers include people who think that modern medicine owes them a way out of their risky lifestyle and those who think it is acceptable to replace food with vitamin pills.

"People have a night on the town, take a Berocca the next day to cure their hangover, and think it cancels out the effect of the alcohol. But what about the other toxic effects of alcohol on the brain, the liver and the heart?" Professor Wahlqvist said.

Certain dangers are associated with taking large doses of vitamins over a long period of time. In particular, they can cause toxic effects.

For example, people who experience reduced coronary mortality due to vitamin E, an anti-oxidant, are usually the people who have increased their polyunsaturated fat intake – the type of fat likely to undergo oxidation.

"But even if vitamins such as vitamin E help us in one area, what are the trade offs?" Professor Wahlqvist asked.

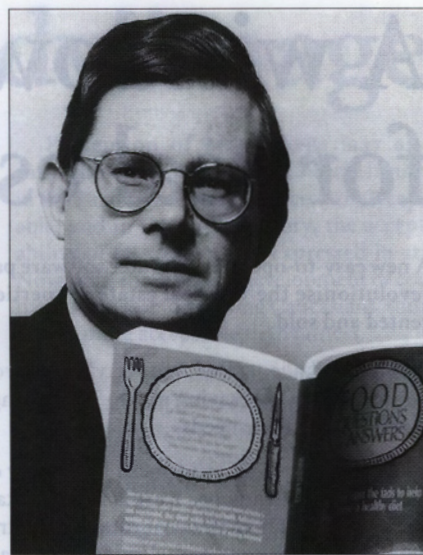
"Too much vitamin E may suppress the body's essential oxidant capacity to unacceptably low levels. A normal function of white cells in the body is to produce oxidants to kill infective agents. If you don't have that oxidant capacity, the body's defence system may not be functioning properly."

Professor Wahlqvist says that in some cases the use of vitamins is warranted. However, he stresses that this is no substitute for food.

"We can make formula feeds and feed people intravenously for those who cannot eat any other way, but this is not the preferred option," he said.

"One can get fairly close to replacing the micronutrients in food, but this is only one aspect of food. Food contains proteins, essential fatty acids, carbohydrates, and many other biologically active substances that cannot be reproduced in a pill."

People who may need some form of vitamin supplementation include the elderly, infants (especially premature infants), pregnant women, people on certain medications, food faddists, people in institutions, and those with low levels of physical activity. However, it is a combination of these things, not the presence of



Professor Mark Wahlqvist: "The most prominent vitamin user is the person with health-seeking behaviour."

one, that is more likely to lead to vitamin deficiency.

Professor Wahlqvist added: "Incidentally, American studies have shown nutrient intake is not associated with increased life expectancy, although it may alter diverse patterns in some individuals."

BY JULIET RYAN

From page 4

from the employee's salary and spreading the remaining amount over 52 weeks.

"People nearing retirement also find this scheme useful as it gives them extra time to develop their outside interests before leaving employment," Dr James said.

"The important issue is choice. If an employer can offer staff a range of choices which recognise that work and family life are interdependent, they will have an edge in attracting the most talented people and keeping those people satisfied, motivated and productive on the job."

As part of its commitment to the International Year of the Family, Montage will present a series of occasional articles on issues raised by Child and Family Services.



18-month-old Stephanie Luo.

In recognition of the United Nations' International Year of the Family, Griffith University has issued a challenge throughout Australia to find which university has the most members of one family on staff or enrolled.

Griffith is putting forward the Wilkie family of Carindale. This year, four out of five members of the Wilkie family will work or study at the university, while the fifth member aims to attend Griffith once she completes her senior certificate.

Can we one up this claim to fame? If you have more than four members of your family studying or working at Monash, let us know.

## Giving birth: a foreign experience

A bowl of rice. A glass of warm water. A little courtesy.

These simple things would make a world of difference to many new mothers from other countries.

According to Dr Pranee Rice, of the Monash Centre for the Study of Mothers' and Children's Health, many seemingly small comforts that Australian women take for granted are out of reach for women of non-English-speaking backgrounds.

Dr Rice believes that most obstetricians and midwives have the best intentions, but may not be aware of the specific needs of their Asian, Middle Eastern or African patients. In most cases, these needs are simple. For example, a common requirement is keeping warm after childbirth.

As Dr Rice explains, it is believed that a woman's body is 'cold' after childbirth because she loses so much blood.

"The concept originates from Chinese and Unani medicines," she said. "In order to restore the heat lost in childbirth a woman must keep herself warm and avoid cold water and cold wind. Taking a shower or washing hair soon after giving birth is prohibited. Breaking this taboo, according to their belief, results in ill health."

This conflicts with the accepted Western practice of showering after the birth. Another conflict arises over the issue of exercise. In Western hospitals, women are encouraged to attend postnatal exercise classes. Asian, Middle Eastern and African women believe exercising after birth causes health problems. They usually rest and regain their strength for 40 days following the birth.

Then there's the problem presented by hospital food. A glass of orange juice might be refreshing for an Australian mum, but it is anathema to many Asian women, who are warned against ingesting cold things.

While many hospitals have introduced restaurant-standard à la carte menus, most Asian women prefer broth, rice, steamed chicken, cooked vegetables and a glass of warm water.

"None of these requests are particularly difficult once you understand the needs of your patient," Dr Rice said. "The important thing is to be able to communicate."

Dr Rice has compiled the results of interviews with mothers from Vietnam, Laos, Turkey, Ethiopia and China into a resource book for health care professionals. *My Forty Days* describes the birth experiences of 10 women from different countries and suggests possible solutions to the conflict between cultures.

Dr Rice said the response from hospitals and health professionals had been very encouraging. She is quick to point out that many of the women praised the Australian health care providers. She also said that many of the women had tried to adapt to the Australian way of life.

"Some women realised that they were no longer able to observe certain aspects of their traditional practices," Dr Rice said.



For many Chinese women, having a baby in Australia creates a conflict between Western medical practices and traditional beliefs. As one Chinese mother explains in the book *My forty days*: "Sometimes I obeyed my parents, sometimes I obeyed the nurses."

"One Hmong woman [from Laos] felt that she should not be too worried about taking her newborn baby out within the 30-day confinement period because she had already taken the infant home from hospital."

"A Chinese woman decided taking a shower soon after giving birth would not harm her because of the drier weather in Australia. An Ethiopian woman had her husband present at the birth because it is a common practice in Australian hospitals, even though the presence of her husband would be prohibited in her culture."

"All that is really required is a little patience, understanding, courtesy and kindness," Dr Rice said.

*My Forty Days* can be ordered for \$15 plus \$3 postage from the North Richmond Community Centre, 23 Lennox Street, Richmond 3121. Telephone inquiries: (03) 429 5477.

The Centre for the Study of Mothers' and Children's Health, part of the Monash Faculty of Medicine, is currently researching pre-term birth and low birthweight, Sudden Infant Death Syndrome, health services, pregnancy, birth and infancy, and the experience of motherhood.



# A window of opportunity for real estate agents

A new easy-to-operate computer software package is set to revolutionise the way real estate properties are bought, rented and sold.

The package, called PropertyView, provides home-hunters with a timesaving method of finding the property that best suits their needs.

Developed partly by Monash University computer systems officer Mr Kuncoro Rusman, the package is expected to redefine the way the real estate industry operates by doing away with consumers' biggest bugbear.

Invariably, finding the right house or flat is a process of elimination. In other words, the final choice usually comes only after the tedious task of walking through properties that are definitely unsuitable. The trouble is that it's sometimes impossible to know whether a property falls into the 'definitely no', or the 'maybe' category without a time-consuming inspection.

The package enables real estate agents to put together computerised photo images and key information points on every property on their books.

Potential buyers or tenants can brief an agent on their main requirements and then view as many properties as they wish without leaving the real estate agent's office. For example, if a client wants a house with a tennis court and five bedrooms, all properties meeting this criteria can be displayed by computer.

The display includes a quality visual display comprising photos of the front of the property and any number of interior shots. A description that includes the price, size in square metres, the age of the property, the number of bedrooms and special comments accompanies the photos.

Mr Rusman says the package is not intended to replace the need for inspections. "PropertyView will provide a far more time-efficient way of conducting the first stage of selling or letting properties," he said.

"The system again becomes very helpful in the closing stages of the decision-making process. PropertyView can be used to refresh people's memory of each of their preferred properties. It will no doubt help real estate agents to close sales, and provide a distinct service to potential buyers or tenants."

Mr Rusman says he is considering further developments to the package that would enable a real estate agent with several offices to network all its listed properties. Therefore, if a client's brief is not specific to a suburb, more properties can be viewed without having to drive long distances.

Another future development to the software includes expanding the network facility to service interstate and overseas inquiries. Mr Rusman added that the system may eventually work via a modem link, enabling clients to inspect properties from their own homes.

He believes the package presents excellent export opportunities and plans to market the product to real estate agents in nearby Asian countries, New Zealand, the US and the UK.



PropertyView reduces the number of time-consuming inspections house-hunters endure.

According to Mr Rusman, another benefit of the package is the relatively small amount of money needed to use the system, which only requires a basic IBM-compatible computer, windows software and a scanner. Mr Rusman estimates that a computer with a 200 megabyte hard disk will store up to 2500 images.

Mr Rusman expects to sell PropertyView for about \$790.

# Limit to enterprise agreements

Enterprise bargaining in the general workplace has been slow to take off since its introduction in October 1991, according to Professor Malcolm Rimmer, director of the National Key Centre in Industrial Relations.

The major reasons for this, says Professor Rimmer, are the recession and inadequate infrastructures to sustain enterprise bargaining in the workplace.

He said it was understandable that people would not bargain in a recession because they were cautious about money.

"Employers are not wealthy enough to outlay extra money and employees are reluctant to enter agreements for fear of losing their jobs," Professor Rimmer said.

Since 1991, the National Key Centre in Industrial Relations at Monash has been collecting data on state and national enterprise agreements and analysing the information in terms of its effectiveness and success.

According to Professor Rimmer, most Australian workplaces are not equipped to undertake enterprise bargaining because employees are not properly represented and managers are not adequately trained.

On a federal level, only 1100 agreements have been reached, representing only 37 per cent of wage earners under federal awards. Developments have been even slower in the state industrial jurisdictions.

Despite the low numbers of enterprise agreements, the latest figures have indicated that the manufacturing industry is leading the way when it comes to formalising enterprise agreements.

A joint report compiled by the National Key Centre and the ACTU found that manufacturers had produced almost two-thirds of all enterprise agreements.

The quarterly report found that the public service had the next highest number of agreements with nearly 12 per cent of the total.

Professor Rimmer said most of the negotiations had been struck with men, simply for the reason that a high proportion of workers in manufacturing were men.

"Despite making up 40 per cent of the total workforce, women have found it hard to get into the enterprise bargaining process," he said.



Professor Malcolm Rimmer.

"The only areas where there have been large numbers of women covered by enterprise agreements is in the banks and the public service.

"But in schools and hospitals, where women make up a large percentage of the workforce, there has been a very slow response to enterprise bargaining.

"It just so happens that the typically male-oriented jobs have been favoured by enterprise bargaining."

Professor Rimmer said 74 per cent of the agreements contained 'annualised' salaries, which involved penalty rates and overtime payments rolled into a higher, annual wage.

He said enterprise bargaining, which is aimed at improving productivity and efficiency, had advantages for both employers and employees.

BY SIMON DARLING

# Learning the hard way

Bizarre as it may seem, a lecturer in the Faculty of Economics recently organised six students who failed his subject last year to speak to his first-year students about study techniques.

Concerned about the faculty's failure rate Dr Graham Richards arranged the lunchtime lecture so that new students could learn about the pitfalls encountered by even the best students.

The lecture, held in the Alexander Theatre and attended by some 500 students, highlighted many of the transitional problems faced by teenagers coming from a 'spoon-fed' secondary school environment to the freedom of university.

Dr Richards, who was chief examiner of HSC Economics for 10 years, said that the lecture aimed to "change the expectations that some students came to university with".

Dr Richards and the six students who took to the podium on Monday 7 March had one basic message for the first-year students: "Don't think you can just cruise through university without doing any work, because you just won't pass."

Many of the student speakers said that the first year of economics at Monash was more difficult than VCE.

One of the speakers said many first-year students mistakenly believed that because they passed everything at school they would continue to do so at university.

The reality, however, is that they are studying with people who have proven themselves to have a certain level of intelligence and dedication – in the case of economics that equates to the top 10 per cent of students in the state.

"The standard in our faculty is very high," Dr Richards said.

A number of recommendations made by the student speakers apply to most other undergraduates at Monash.

The speakers recommended that students seek 'out-of-tutorial' assistance whenever a concept isn't clear, establish self-discipline (particularly for those people living in the Halls of Residence), allocate time to study at home, stay positive after mid-semester exams and attend university five days a week.

One speaker made the point that each time a student fails a subject "another door to their future is being closed". Each failed subject also requires an extra semester of study and another lot of HECS to be paid.

With one exception, each of the student speakers had sat in a similar lecture last year. One speaker spoke for the others when he said: "I never thought I'd be up here telling people the same thing that I was told last year. I am certainly not proud of my efforts."



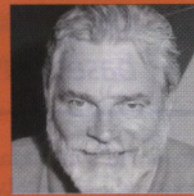
# RESEARCH

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*Facing a future based  
on credit*



*Wine: have a  
red instead*



## New model gains strong support



*From unstable beginnings: the North Rankin A platform now stands strong off the West Australia coast.* Photograph courtesy of Woodside Offshore Petroleum Pty Ltd.

*Unique geological and weather conditions on Australia's vital North West Shelf gas fields have created problems in erecting safe, stable rigs. But a new computer-based mathematical model devised by Monash researchers is helping to overcome the engineering problems.*

Huge seas whipped up by cyclones are only one of the many obstacles facing offshore gas-drilling platforms on Australia's North West Shelf.

When Woodside Offshore Petroleum began driving two-metre diameter steel piles into the seabed to support its North Rankin A platform in the mid-1980s, they unexpectedly speared through soft calcareous sediments below the sea floor for 110 metres.

Dr Chris Haberfield of the Department of Civil Engineering says the sediments, built up from shells and the remains of marine organisms, were very porous and offered very little mechanical strength to provide a stable footing for the enormous rig.

Because the rig stood in 125 metres of water, the piles had to be very long to reach the stronger calcareous rock (or calcarenite) below the soft sediments. The primary piles were considered to be inadequate to support the platform safely, and an extensive investigation was carried out to determine methods for strengthening the foundation. Several options were investigated, including extending the pile length by installing insert piles through the primary piles (diagram one) and belling out the bottom of the primary piles (diagram two).

Initially, the favoured option was to use drilled and grouted insert piles. This technique, which involved drilling a hole down beyond the end of the primary pile and pressure-grouting the insert pile into the hole, had been used successfully elsewhere. As the contact between the grout and the surrounding calcarenite is rough, the frictional resistance of the pile is increased. Nevertheless, there were grave concerns about the stability of the piles in the long term because little was known about how cyclic forces, caused by wind and wave action, would cause the legs

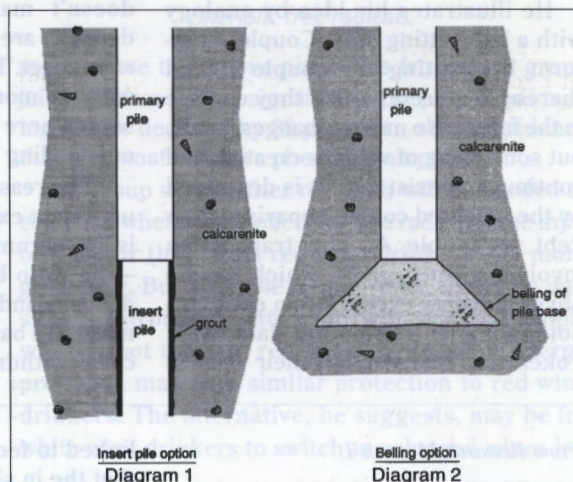
to twist and flex, progressively destroying the pile's frictional resistance.

"There's no other area in the world with the same combination of geological and weather conditions," Dr Haberfield said. "Calcarenite is a pretty horrible material, and as the piles cycle under load, it tends to shear and break down. As a result, it no longer provides adequate support to the piles."

These concerns eventually caused Woodside to adopt another option for the North Rankin A platform at a cost in excess of \$200 million. However, insert piles were subsequently adopted as the planned foundations for a sister platform, Goodwyn A, also located on the North West Shelf.

Given the importance of the North West Shelf gas fields to Australia's economy, Dr Haberfield and Monash's Professor Ian Johnston (now dean of engineering at Victoria University of Technology) secured an Australian Research Council (ARC) grant to investigate the performance of the insert piles under cyclic loading. The grant enabled them to complete the construction of a very large special purpose test rig, the first of its kind in the world. The rig was used to simulate and test the interface between a grouted pile and calcarenite under virtually any combination of cyclic forces of the magnitude that would be experienced on the North West Shelf.

Dr Haberfield says the interface between the grout and the sediment is modelled mathematically in two dimensions. The predictions are then tested in a shear box incorporated within the test rig. Because of the prohibitive cost of shipping calcarenite core samples from the North West Shelf, the tests were performed using a soft calcareous rock from Mount Gambier, called Mount Gambier Limestone.



The Monash group, consisting of Dr Haberfield, Professor Robert Johnston and PhD student Mr Julian Seidel (now a lecturer), wanted to see how various profiles of grouting would perform to offer maximum grip and strength.

"As the pile moves, the pile's rough interface pushes against the surrounding rock, strengthening the pile resistance," said Dr Haberfield. "One of the main problems is working out how to characterise the roughness profile, as the shape of the roughness has a large influence on the pile capacity."

The group used fractal geometry – a part of chaos theory – to characterise surface roughness, and to model different degrees of roughness in their model tests. This novel technique for modelling rough surfaces was conceived by Mr Seidel. It allowed the research team to use a probabilistic approach for describing the interface between the grout and the rock.

"Others have tried the reverse approach of taking real interfaces and trying to extract the fractal dimension for use in a mathematical model," Dr Haberfield said. "Given that our real-world interface is 300 metres below the sea surface, we would have got nowhere."

*Continued on Research Monash 2*



# Predicting where credit is due

*An innovative concept for the world's monetary system developed by a Monash computer scientist could change the way we think about money. His radical plan bases future monetary systems on bank credit.*

The world's monetary system was not designed – it evolved over the centuries. After abandoning the gold standard, it is now coming to grips with the electronic age.

Professor Les Goldschlager of the Department of Computer Science would like to speed up the evolution towards a new monetary system based solely on credit. But, he says, economists will have to radically revise long-held notions about what money is.

Professor Goldschlager has developed his loans standard system (LS) in collaboration with Professor Ian Harper, a professor of economics in the Graduate School of Management at Melbourne University.

"I came into this research field by asking a simple question: Where does the underlying value of money come from?" Professor Goldschlager said.

The computer model shows how LS would work – it can be played as a game, involving multiple players communicating via a computer network. Professor Goldschlager has taught its principles to high school students, who rapidly learn something that trained economists sometimes find elusive – that money need have no physical reality or 'mass', its underlying value rests on nothing more substantial than promises and trust.

He illustrates his idea by analogy with a babysitting club. Couple A perform babysitting for couple B and thereby acquire a 'credit' they can use in the future. No money changes hands, but something of value is created, and continues to exist until it is destroyed by the indebted couple 'repaying' their debt to couple A. The transaction involves a time credit, which has no physical reality except for an entry in a notebook – or a computer data bank. Tokens can be used, but their value is

still based on a promise – the system works purely on credit.

Professor Goldschlager says that an implicit assumption of modern economics is that money is somehow analogous to mass, and obeys similar laws of conservation. He believes this paradigm is flawed, citing the case of the old lady who insists that the bank teller show her all the money in her account. Professor Goldschlager says the idea that money must have physical existence renders current monetary systems dangerously unstable. In Victoria, the run on the Pyramid Building Society sent shock waves through the state's entire monetary system, threatening it with collapse.

"In the new loans standard system, the standard which backs the money supply is the value of all outstanding bank loans. A bank's loans portfolio replaces the gold standard in the old system," he said. "An interesting property of the LS is that you can't get a run on the bank, whereas in the existing system, if a lot of people withdraw their money, institutions can collapse. Our present system can be destabilised by rumours; with the LS, it could only be destabilised by massive default – which, incidentally, would also destabilise the existing system."

"If you think about it, a run on a bank doesn't make any sense, because deposits are liabilities on a bank's balance sheet. There is nothing you can do with the money except to transfer it to somewhere else or use it to repay an outstanding loan."

"The reason we have runs on banks under the existing system is that there is a government-imposed reserve ratio – the ratio between a bank's reserve deposits and the volume of loans it can make. If a bank starts calling in loans to cover withdrawals during a run, it can



Professor Les Goldschlager: the value of money rests on promises and trust.

snowball and cause bankruptcies among companies that were trading well, and which could have remained solvent if they had been given time to repay."

A key change under LS is that a bank's deposits would not be part of its balance sheet, but would be recorded on a central or national bank's balance sheet. So deposits would not belong to any particular bank.

"If somebody then withdraws all their money, the bank is not affected because under LS the deposits are not coupled with the loans side of its operations," Professor Goldschlager said. "This is because loans make no use of existing money – the money is actually created when the loan is made."

"Some people find my system bizarre, but it's the existing system that is bizarre. A bank doesn't fund a loan; the loan is funded by the promise of the borrower. When a bank makes a loan on sound business lines, it collects from the borrower a promise to repay. The instant you create a loan, you create money; the money's value is exactly backed by the value of the promise."

Professor Goldschlager says this resolves two questions that have long troubled economists: how and when is money created, and how does it get into circulation? The money is created when the loan is granted, and enters circulation every time a book entry is made, or a token is created, representing the promise to repay.

"There will always be some proportion of loan defaults, whether through fraud, bad management or bad luck," he said. "That is why the present sys-

tem and my proposed system have an interest-rate margin – the difference between the interest paid on deposits and the interest charged to borrowers. The overheads may also be contained within this differential, or can be covered by separate transaction fees. The size of the margin relates to the probability of default; a low margin reduces the cost of borrowing."

The idea of a monetary system, Professor Goldschlager says, is that currently held assets can be traded for the promise of assets to be produced in the future. The chaos of the late 1980s resulted when banks made imprudent loans to entrepreneurs who bought real estate, rather than generating new wealth. When the real estate market crashed, the entrepreneurs defaulted, destabilising the monetary system. Under the LS system, this would be much less likely to occur, because the emphasis would be on creating wealth through more rigorously evaluated loans.

Professor Goldschlager says international monetary systems are actually evolving in this direction, thanks largely to the increasing pervasiveness of computers in the banking system.

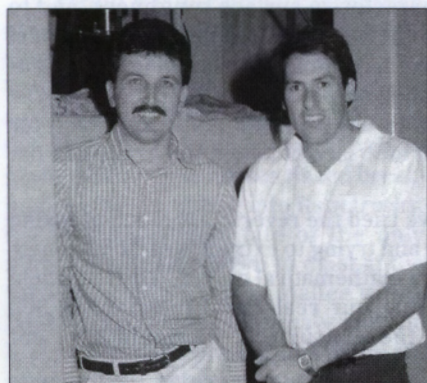
"People are beginning to better understand that money can be just an abstract representation in their bank account, stored on a computer. It doesn't have to be a physical thing," said Professor Goldschlager. "Coming from a computer-science perspective, it's easier to see this than it might be for a person who has been educated in the paradigms of a different discipline."

From Research Monash 1

## Model gains support

"Once we had mathematical descriptions of our profiles, we cut them out of Mount Gambier Limestone, cast a matching block of cement grout against them, and tested them in the rig. We cycled them back and forth under different combinations of forces to simulate the in situ load combinations."

The forces and displacements had to be controlled very precisely by sensors



Mr Julian Seidel (left) and Dr Chris Haberfield.

linked to feedback systems to ensure that the in situ conditions were reproduced correctly.

"It's an important problem which is going to come up again," he said. "Woodside's costly experience on the North West Shelf has scared the offshore petroleum industry away from grouted piles. In Bass Strait, the industry is moving towards gravity platforms that sit on a big, flat footing on the sea floor. Others are using small, isolated wells in the sea floor."

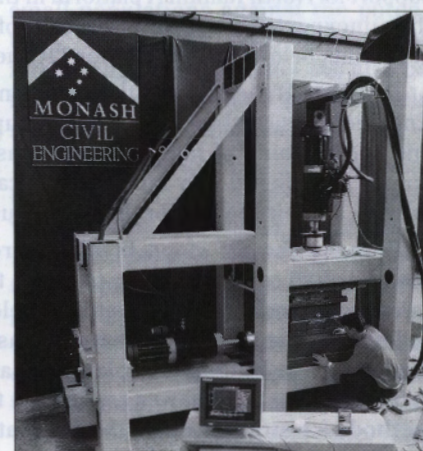
Mr Seidel's PhD has yielded a computer-based pile design program model called ROCKET, which runs in the Windows environment. Civil engineers will be able to use ROCKET to design grouted pile structures for a wide range of geological conditions and loadings. Dr Haberfield said the model would be just as useful for designing both the grout and concrete piles that are used to support other heavy structures such as tall buildings sitting on low-strength rock, for example the mudstones that underlie much of Melbourne's CBD.

Dr Haberfield said the annual cost of drilling grout or concrete piles in Australia runs at around \$100 million. In the

past, engineers have been forced to be very conservative in their designs, allowing large safety margins in the absence of good information about how the piles will perform. "This costs money," he said, "and the aim of our research is to minimise cost while maximising performance."

His research group has received another ARC grant to investigate using expansive concretes to improve pile performance. This technique involves using a calcium sulpho-aluminate additive, which causes sulphate attack in the concrete or grout after it hardens. Normally, engineers try to avoid sulphate attack because it causes the cement to weaken and break down, but under conditions of confinement, this expansion actually adds frictional resistance to the piles by locking them more tightly into the surrounding rock.

The expansive concrete technique may yield huge increases in pile performance, and has potential benefits for rock anchors used to stabilise the walls of open cut and underground mines, as well as road cuttings. The anchor technique could allow steeper slopes to be safely stabilised. "In an open cut mine



The world's first special purpose test rig.

of relatively modest size, if you can increase the angle of the slope by just one degree, you can save a million dollars in the cost of removing overburden," Dr Haberfield said.

Dr Haberfield paid tribute to his department's laboratory manager, Mr Chris Powell, and his technical staff – Mr Karl Gomilshak, Mr Bruce Meehan, Mr Greg Stroot, Mr Max Graham and Mr Roger Doulis – for their superb work in building and commissioning the test rig.



# Uncorking the red genie

Folklore has long credited red wine with being an elixir of life. In the past it has proved difficult to identify any factor in red wine that might account for its health-giving properties. A new study by two Monash physicists may have isolated the vital ingredient.

make red wine red; they also form complexes that give red wines their characteristic flavours.

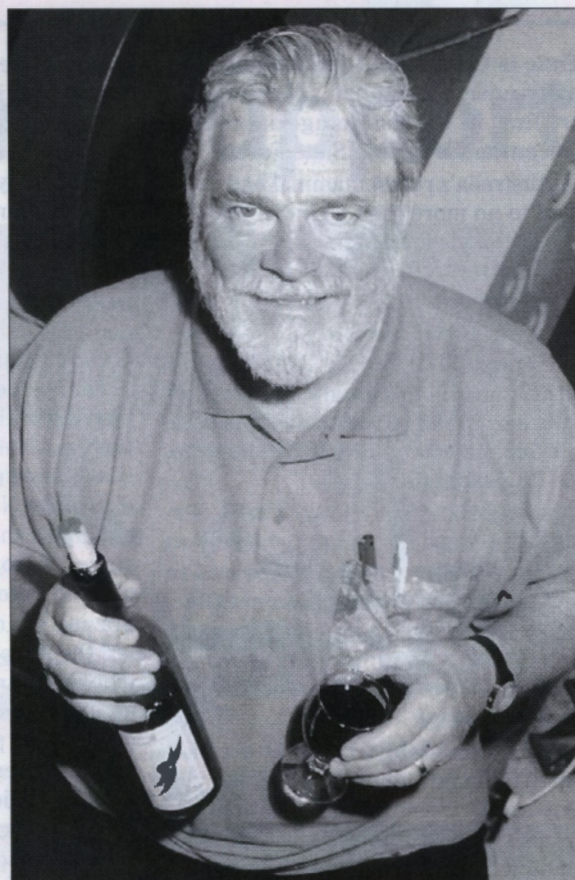
Dr Troup suspects the newly identified phenolic free radical may actually mediate these processes. A phenolic molecule can act as an anti-oxidant in two ways. If it does not carry a free radical (an unpaired electron), it can transfer the radical on the 'bad' molecule to itself, and stabilise it, thus removing it from 'the game'. Or, if the phenolic does carry a radical, it can pair it with the radical on the 'bad' molecule, thus destroying both radicals. He wonders if the phenolic free radical may be assisting other compounds like vitamin C to detoxify dangerous oxygen free radicals before they can oxidise LDLs.

Dr Troup says other researchers now need to do experiments to determine whether the phenolic free radical is serving as a protective agent in red wines – such a finding would be the strongest evidence yet that folklore had it right.

Dr Troup and Dr Hutton, together with their colleagues Dr Charles Hunter of the Medicine faculty and Dr David Hewitt from the Chemistry department, have previously used ESR spectrometry to identify and measure free radicals in a range of foods. Roasted or grilled food, including toast and barbecued meat, and coffee and stout have been found to have more free radicals than uncooked foods. Toasting could also be a source of the free radicals in red wine – Dr Troup notes that red-wine makers traditionally 'toast' their oak barrels at 200 degrees before storing the wine in them.

But Dr Troup says the signature of the phenolic free radical is detectable in grape juice immediately after it has been crushed; the signal is enhanced in red wines aged in oak. It is not normally present in juice or wine from white grapes – although they have found it in an oak-aged Australian semillon left for some time 'on the skins'.

The Monash researchers were only able to detect the phenolic free radical's signal after concentrating the wines tenfold under a cold vacuum. An Australian shiraz gave a strong signal, but a semillon concentrate was silent. When they filtered red wine through polyvinyl polypyrrolidone, a polymer that white-wine



Elixir of life: Dr Gordon Troup puts red wine's medicinal properties down to the existence of phenolic free radicals.

makers use to remove phenolics from their grape juice, the free radical signature in the pale, bland-tasting filtrate declined by 80 per cent – strong evidence that it emanates from a phenolic compound.

Dr Troup says further research will be needed to establish whether the phenolic free radical is the mystery factor that helps red-wine drinkers age more gracefully. But if its role is confirmed, it may be possible to introduce it into white wines so that people who cannot tolerate red wines because of allergy problems may gain similar protection to red-wine drinkers. The alternative, he suggests, may be for white-wine drinkers to switch to oak-aged wines left

**Modern epidemiological studies suggest that moderate, regular consumption of wine – especially red wine – offers some protection against cardiovascular disease.**

When Dr Gordon Troup and Dr Don Hutton, of the Department of Physics, read a report published in *The Lancet* last year which proposed that red wines contain a natural anti-oxidant, their interests were excited.

Certain types of anti-oxidants, including vitamins A, C and E, appear to protect the human body against dangerous reactive molecules called free radicals, which can damage the DNA of genes and impair vital enzyme reactions.

Oxygen atoms normally travel in pairs; when separated, they form a highly reactive form of oxygen called an oxygen free radical, which is suspected of being involved in the oxidation of low-density lipoproteins (LDLs) – the so-called 'bad cholesterol' – in the bloodstream. The oxidised LDLs are stored in the walls of arteries, creating fatty deposits called atherosclerotic plaque that can build up and block arteries, causing heart attack or stroke.

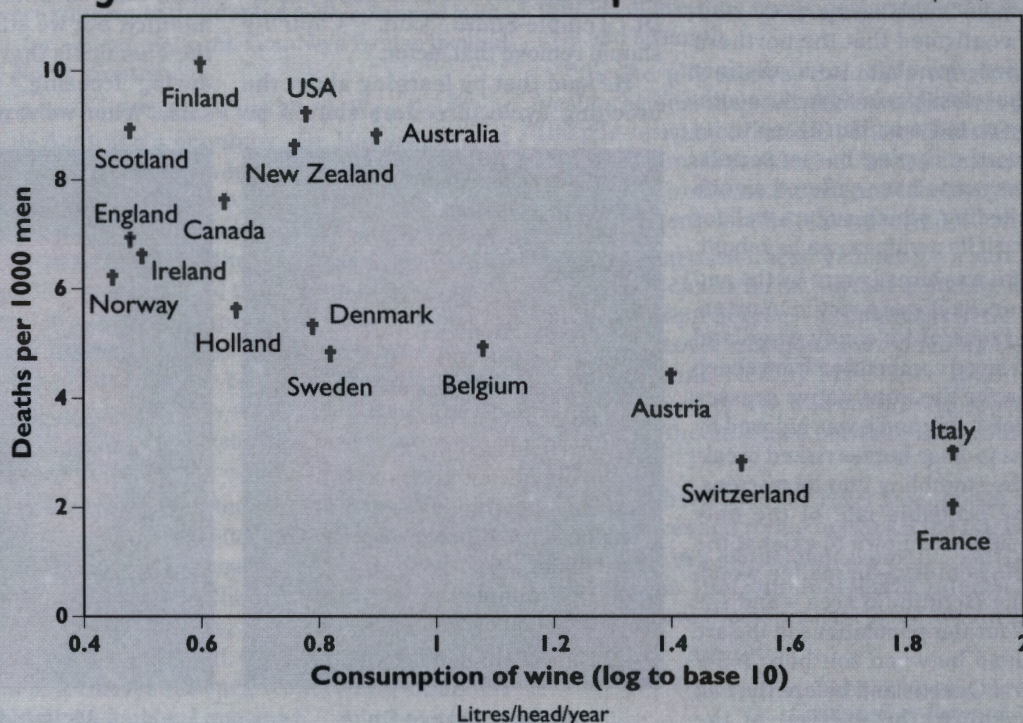
Several years ago Dr Troup and Dr Hutton designed and built their own compact version of an analytical device called an electron-spin resonance (ESR) spectrometer, which they have since used to identify different types of free radicals in various foodstuffs. Suspecting that the anti-oxidant in red wine may be a 'friendly' free radical, they decided to use ESR to hunt for it. They published their results recently in the journal *Free Radical Research Communications*, and nominated a prime candidate – a phenolic free radical.

Phenolics are a family of molecules that are chiefly responsible for the distinctive colours and flavours of all red wines. Red and black grape varieties synthesise phenolics in the layer of pigmented cells just below the skin – seeds are also rich in phenolics, which account for the astringent taste when grape seeds are chewed. When the grapes are crushed, the red-wine maker leaves the skins in contact with the juice during fermentation. During the traditional aging of the wine in oak barrels, the phenolics are thought to react with compounds in the wood, promoting the development of flavour and colour.

In contrast, white-wine makers remove the grape skins and treat the juice with agents to remove the phenolics which can cause the wine to discolour or develop the flavours that some white-wine drinkers find unpleasant.

Phenolics are all variants on a basic biochemical theme: a hexagonal ring of carbon atoms with other simple chemical groups attached. Phenolic rings link together to create the anthocyanin pigments that

## Relationship between ischaemic heart disease mortality rate in men aged 55 – 64 and wine consumption. From Bulletin De L'O.I.V. (1986, 669–670)





# Wombats fight extinction

The northern hairy-nosed wombat seems set to earn the dubious distinction of being the largest mammal to become extinct on the Australian mainland since European colonisation. But a pair of Monash reproductive biologists have different plans for the animal's future.

Time is running out for the northern hairy-nosed wombat (*Lasiorchinus krefftii*) in its last refuge in central Queensland's Epping State Forest.

Australia's rarest mammal had dwindled to no more than 80 individuals by the end of last decade, and numbers may currently be as low as 60. Most alarmingly, there may be as few as 20 females of breeding age.

Although the forest's 3500 hectares are protected, the animals range over little more than 10 per cent of this area. It would take very little to tip the wombat into extinction.

Queensland's National Parks Service has not been content merely to watch over the wombats; it wants to protect *Lasiorchinus krefftii* from extinction by developing a breeding program to increase its numbers. But virtually nothing is known of the species' reproductive biology.

Understandably, there is a reluctance to disturb the few remaining animals, so Dr Peter Temple-Smith of the Department of Anatomy and masters student Mr Vernon Steele are studying *L. krefftii* by proxy – by focusing on its more common cousin, South Australia's southern hairy-nosed wombat, *L. latifrons*.

"If the northern species is going to be rescued, we don't want to disturb them because it may cause them to abandon the area. Nor do we want to expose them to stress or the risk of infection," Dr Temple-Smith said. "We have been given funding to begin looking at the reproductive processes of the southern hairy-nosed wombat and the project is going well now."

When Mr Vernon Steele came to work with Dr Temple-Smith, he was looking for a research project. Through contacts he developed with the South Australian National Parks Service, he was able to gain access to a private property in the South Australian Riverland whose owner had a licence to cull some southern hairy-nosed wombats.

Dr Temple-Smith says genetic studies have confirmed that the northern hairy-nosed wombat is a distinct species, but closely related to the southern hairy-nosed wombat. Despite its small size, the Epping Forest population seems not to have suffered significant inbreeding, which augurs well for its survival if its numbers can be rebuilt.

*L. krefftii* was already rare by the end of last century: it was a victim of extensive clearance of its sandy woodland habitat; it faced competition from sheep and cattle for the *Stipa* native grasses upon which it fed; and it was unloved by pastoralists whose horses risked breaking legs by stumbling into its warrens. Given the probable fate of the only other population known to exist at the turn of the century – in mallee woodland in the Deniliquin area – and the loss of all former populations in the arc of woodland between southern NSW and central Queensland before the end of last century, the survival of the

Epping Forest population into the modern era was improbable.

It is unlikely, but possible, that other populations of the northern hairy-nosed wombat may have survived. There are occasional rumours of animals being sighted in the Mallee woodland near Deniliquin. But if other survivors exist, farmers are unlikely to reveal them out of concern that their properties may be declared conservation areas.

Mr Steele says the southern hairy-nosed wombat is common in areas of the South Australian Riverland near Blanchetown, and on the eastern margins of the Nullarbor Plain. Yet it too has suffered a sharp contraction in its range since European settlement, being pushed into limestone areas where grazing is a marginal enterprise.

"On the property in South Australia where we are studying them, we saw 208 animals in two hours of driving around the paddocks. Most were just sunning themselves around their warrens," he said.

Little is known about the reproductive biology or behaviour of hairy-nosed wombats, but Dr Temple-Smith said a 1970s study by Adelaide university's Dr Matthew Gaughwin indicated that droughts had a dramatic effect on the southern hairy-nosed wombat's breeding. If the same is true of the northern hairy-nosed wombat, this is an ominous finding, given that much of Queensland is currently gripped by the worst drought this century.

Mr Steele has been attempting to establish how hormone levels vary in adult animals during the year, particularly during the breeding season. While the emphasis is on taking blood samples from wombats under field conditions, more detailed studies will be made of half a dozen animals from South Australia, which are soon to arrive at Monash for captive studies.

"We are looking to see if there is any great variation in breeding seasons, given that Matt's thesis indicated that the animals only breed in good years," Dr Temple-Smith said. "Captivity should remove that factor."

He said that by learning about the breeding cycle, breeders should be



The southern hairy-nosed wombat provides a fine substitute for researchers trying to study the animal's nearly extinct northern relative. Photo courtesy of the Melbourne Zoo.

able to manipulate the reproductive system of the species to produce fertilised eggs on demand. It may then be possible to exploit the close genetic relationship between the northern and southern hairy-nosed wombats, for example by using southern females as surrogate mothers. If all goes well, the northern females that have supplied the embryos will then enter another breeding cycle, allowing numbers to rebuild more rapidly.

Mr Steele has been attempting to determine if regular measurements of deep body temperature are a reliable cue to the time of ovulation – as is the case in human beings. He has taken vaginal smears for correlation with blood hormone levels, and has equipped four females with radio transmitters that relay their body temperature as they move freely in the field.

The male reproductive system will also come under scrutiny. The Monash researchers have developed an electro-ejaculation technique and a successful protocol for long-term cryopreservation of sperm. These developments should circumvent any problems associated with sperm production being inhibited in captive males and also to provide a bank of spermatozoa for further studies.

Early experiments indicate that it will be possible to freeze sperm without impairing its viability. "We've definitely been able to obtain good post-thaw motility, but we still need to optimise the chemicals that protect the sperm during freezing," Dr Temple-Smith said. "When we've got it right, we hope

as a first priority to take a series of sperm samples from males in the wild in Queensland. It will be a first step towards preserving the species through long-term storage of gametes [eggs and sperm]."

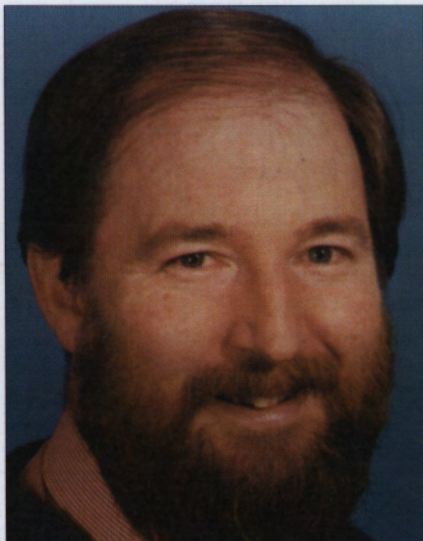
The Monash researchers have used a laparoscope to look at the structure of the ovary in the southern hairy-nosed wombat, and say the procedure is straightforward – eventually the laparoscope will be used to collect eggs or carry out artificial insemination.

Mr Steele says Queensland wildlife authorities are also planning to take a regular three-year census of all animals in the Epping Forest to study age distributions, sex ratios and the structure of the breeding populations. He hopes, for example, to find out whether a dominance hierarchy among males could limit genetic diversity.

Blood samples will be taken to see how closely the reproductive cycle of the northern species parallels that of the southern species. Dr Bill Sherwin and Ms Andrea Taylor of the University of NSW will study blood samples to determine the parentage of all individuals – crucial information for protecting small populations against the potentially deleterious consequences of inbreeding. Some animals will also be fitted with radio collars to allow their movements to be tracked.

What little is known about the social behaviour of southern hairy-nosed wombat comes from Dr Gaughwin's 1970s observations. The study suggests that despite their propensity to aggregate in large warrens, like rabbits, the wombats are not particularly social creatures. The warrens may simply provide a means for avoiding heat and water stress in the semi-arid zone. "The whole life strategy of the southern hairy-nosed wombat seems to be based around conserving energy and moisture," Dr Temple-Smith said.

If successful captive-breeding programs can be developed on the basis of information about the species' reproductive biology, they could yield enough northern hairy-nosed wombats to allow them to be reintroduced to other suitable habitats in eastern Australia – including perhaps, the Deniliquin area where the only other known population became extinct early this century.



Dr Peter Temple-Smith.



Mr Vernon Steele.



# Sharpening the focus on body image

Young women are not the only the group who are struggling with their own body images.

According to a Monash study, many older men have a distorted view of their bodies, leading to increased health risks for this age group.

Many older people (aged 51 to 65) believe that increased fatness with age is acceptable. But a failure by older people to understand body composition changes means that many may be even fatter than they think they are, because lean mass reduces with age.

Leader of the body image study, Professor Mark Wahlqvist of the Department of Medicine at Monash Medical Centre, believes that doctors need to be cautious about counselling elderly people to lose weight.

"When elderly men lose weight, they tend to lose muscle rather than fat, but it is important to maintain muscle volume because the muscle is an important place where our protein and nutrients are stored," Professor Wahlqvist said.

"The medical profession and the media place far too much emphasis on the need for men to control their weight rather than abdominal fatness as they become older. The

emphasis placed on control of heart disease, stroke, diabetes, and other weight-related medical problems has to do with fat around the middle.

"Older people should take up light exercise to build up body muscle weight rather than diet.

At the same time, the study has found that many underweight older men see themselves as more overweight than they really are.

Preliminary findings suggest that older men tend to be more underweight than their younger counterparts, but see themselves as more 'normal' than their younger counterparts, and do not want to change. Therefore older (or middle-aged) men are at risk of staying underweight.

Although obesity remains just as much a concern in older men as younger men, being underweight may affect their immune function and muscle strength, leading to a proneness to fall and diseases such as osteoporosis.

While most research into body image has focused on the attitudes and behaviour of young women, the Monash study has been investigating body image across a range of age groups as well as from different cultural perspectives.

The body image study is part of a cross-sectional population study on the food habits and health of Anglo-Celtic Australians, which is also looking at ethnicity and health among Chinese, Greek and Indian Australians.

The study has been investigating individual perceptions of shape, size, fatness and its distribution, and comparing these findings with body composition assessments.

Representative samples of people have been asked on a set of diagrams (see below) to indicate what 'body size' they consider themselves to be and what they would like to be.

The study found that at least five factors may affect body image: ethnicity, historical framework, gender, health and disease, and age.

People from different ethnic backgrounds perceive their body image differently. For example, people from Chinese or Indian backgrounds may perceive abdominal fatness as attractive, through identifying with Buddha or wealth. In Greek culture, increased hip size may be seen as desirable, whereas in Anglo-Celtics, the interest in slimmness is driven by fashion and by what is difficult to achieve.

Perception of body image may also shift with the times. In early Chinese history in the Tang Dynasty, fat women were acceptable, and in European history, the acceptability of fat women was expressed in art. Now, with more recent development of cosmetics and fashion among Caucasians, slimmness is more acceptable than fatness.

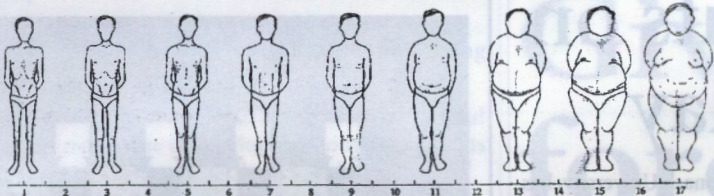
Although there is still insufficient data to support gender differences in body image, adolescent men are more concerned about upper body development and young women in general thinness.

According to the study, the high prevalence of chronic degenerative diseases such as diabetes and cardiovascular diseases (heart disease and stroke) has led to a widespread view that fatness has to be avoided. However, as HIV infection becomes more common, it believes more homosexuals may prefer fatness.

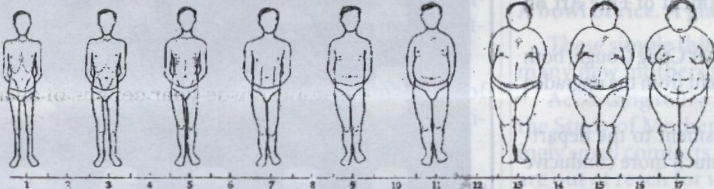
Similarly, fatness may become preferable to thinness as a reaction to a relative increase in neoplastic diseases (ie cancer) and associated wasting.

BY KAYE QUITNER

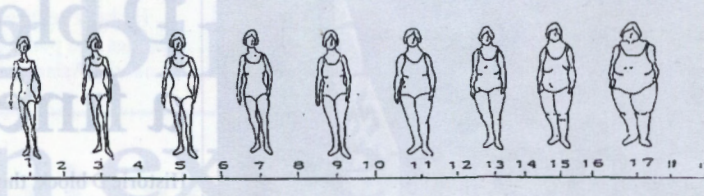
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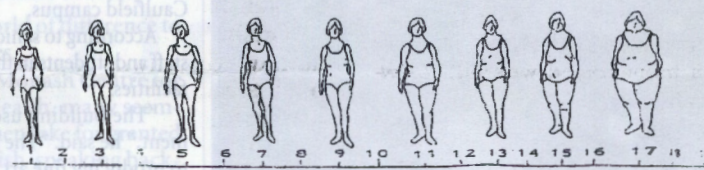
Circle the number on the line closest to the size you would like to be.



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Circle the number on the line closest to the size you would like to be.



## Local diet raises migrant heart risk

One of Professor Wahlqvist's team, research fellow Dr Bridget Huey-Huey Hsu-Hage, has looked specifically at how Australian diets affect Chinese migrants.

Her study of 547 Chinese migrants in Melbourne showed that after 10 years of living in Australia and eating less traditional foods, their risk of heart disease increased.

The usually low heart disease risk factor in the Melbourne Chinese population became comparable to the Australian high risk level soon after migration.

Dr Hsu-Hage said Chinese people come to Australia and think that because they are slim they can eat anything.

"Melbourne Chinese, a presumed low-cardiovascular-risk population, are in fact at comparable risk to other Australians," she said.

Overall, the prevalence of high blood cholesterol in Melbourne Chinese was

comparable to the general Australian population.

Dr Hsu-Hage warned that Melbourne Chinese should not become "complacent about their diets when they immigrate to Australia and need especially to watch their fat and salt intake, the main reason for the increased risk".

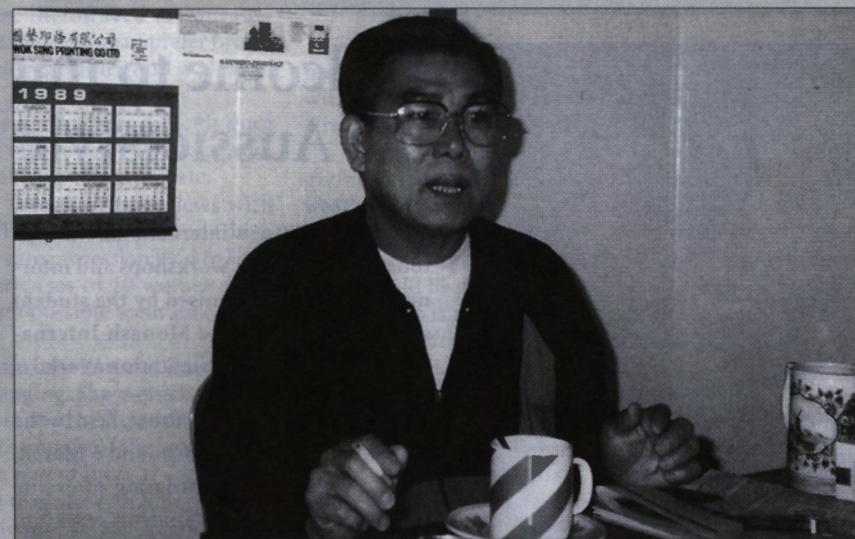
She also stressed the importance of exercise as a preventive measure and encouraged migrants to take up walking if they cannot find a team sport to become involved in.

"We are hoping to develop an appropriate intervention program to educate migrants about the risk factors and about diet," she said.

The research is being expanded into Asia Pacific regions as a means of gaining information about the impact of economic transition on health.



A Chinese family (above) on arrival in Australia in the late 1970s. The head of the family (far left) appears 10 years later (below) to have undergone changes in body weight as a result of his westernised diet.



Sunday breakfast: while the contents are "westernised" the use of Chinese additions such as soy sauce and chopsticks still continues.



## Clowning around during O-week



More than 300 activities designed to ease students into the university year took place at Monash during Orientation Week. The Monash Association of Students presented many bands as lunchtime entertainment, including the Clowns of Decadence (above).



## A successful sail

Ten Monash students successfully competed in the Australian Universities Sailing Championships held over summer on Queensland's Lake Cootharabra.

Monash was particularly successful in the Laser class, winning both the women's and men's divisions.

With 32 points at the end of the competition, Monash placed second, just one point behind Sydney University.

Pictured competing are Mr Rhys Tucker and Mr Ivan McBean.

## D block puts on a fine display

Historic D block, the oldest building at Monash University, has recently re-opened with prospects for a fine future.

Following a \$150,000 revamp, the 1922 building is now home to the university's highly regarded Department of Fine Art on Caulfield campus.

According to senior lecturer in painting Mr Craig Gough, both staff and students in the department will benefit from the upgraded facilities.

"The building used to be an embarrassment to the department," he said. "The new environment is much more conducive to producing fine art."

The building, which is listed in Caulfield Council's historic buildings register, will feature regular exhibitions by staff and students.



Mr Cole Sopov (left) and Mr Andrew Sibley prepare for the opening of the renovated D Block.  
Photo courtesy of the Caulfield-St Kilda Leader.

## The arts gallery

### ■ The Monash Gallery

Through the Surface: Jonas Balsaitis, Paintings 1968-1992.

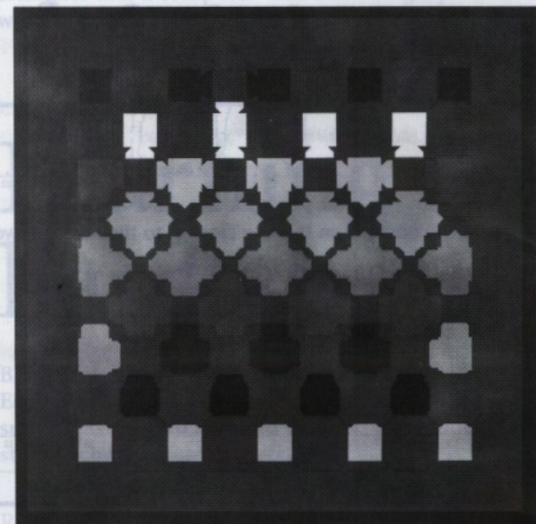
The exhibition is a comprehensive survey of the paintings of Australian artist and filmmaker Jonas Balsaitis. It is presented in conjunction with guest curator Carolyn Barnes, who has spent several years researching the artist's career and work.

Paintings by Balsaitis are deceptively complex, concealing a multitude of technical and intellectual procedures. Although they include the traditional method of paint on canvas, the works refer to developments that occurred in the late 1960s and the 1970s and 1980s such as photomechanical reproduction and computer imaging.

A series of paintings from the late 1960s explores grid form patterns and the concept of computer processes as the future mode of aesthetics that was forecast to replace artisan creativity. The disjunctive forms of a subsequent series in which grids float in veils of paint are concerned with the duplicitous and anti-human nature of much of modern technology, particularly as it has been applied in Western warfare.

Always addressing the questions of 'how' and 'what' to paint, Balsaitis has worked through a diverse range of possibilities. Through both serial and single images, Balsaitis has consistently negotiated the nature of the art object and the possibility of an artistic practice integrated in wider social forces.

The curator, Ms Carolyn Barnes, will give a talk about the exhibition on Wednesday 27 April. The exhibition runs from 13 April to 14 May.



Pattern in Calculus, 1969. By Jonas Balsaitis.

### ■ Robert Blackwood Hall

Olivier Latry plays De Grigny

Olivier Latry, one of the most notable organists of this century, will perform the Organ Mass from the Livre d'Orgue on Thursday 7 April. The work by Nicolas De Grigny has been acclaimed as the highest achievement in the organ music of the French classical period, and will be performed on Australia's finest organ in the baroque style. For bookings, telephone 328 2592.

### ■ Religious Centre

Concert De Clavecin

Sydney harpsichordist Pastor de Lasala will play a selection of French compositions, including works by Rameau, Couperin, Forqueray, Dagincourt and Duphy on 7 April. For bookings, telephone 328 2592.

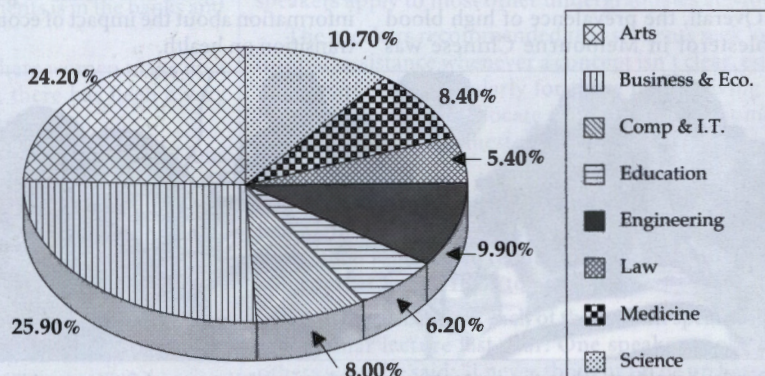


## Welcome to uni life Aussie-style

More than 1000 new international students took part in various workshops and information sessions organised by the student support section of the Monash International Office during Orientation Week.

An Orientation Gala Dinner, held by the International Student Forum on 5 March, completed a vigorous program of events designed to help the new students settle into university life Australian-style.

Enrolments by Faculty 1993



Figures supplied by Monash Statistical Services Section.



# Suicide and unemployment linked

Youth suicide is linked to unemployment but is not a direct result of it, according to the coroner's working party study on youth suicide.

The study looked at the number of recorded suicides between 1907 and 1990, taking into account factors such as age, sex and place of residence. The results were obtained from data supplied by the Australian Bureau of Statistics.

In regions experiencing high youth unemployment, the study found that high suicide rates also existed, but only in males aged between 20 and 24. There is, therefore, a link between suicide and unemployment but age and sex are also influential factors.

Dr Jerzy Krupinski, a member of the working party and associate in the departments of Psychological Medicine and Social and Preventive Medicine, said previous research related suicide directly and solely to the very high unemployment rate.

"This study has shown that unemployment by itself does not explain everything," Dr Krupinski said.

"Youth suicide in males went up at a time of full employment in the sixties when there was no problem with finding a job.

"We also found that the suicide rate has been going up steadily in males aged 20 to 24 since the sixties but unemployment has only shown an increase in recent years."

While the male suicide rate has increased steadily, the female suicide rate has remained relatively low by comparison. The overall suicide rate for males aged 20 to 24 was consistently higher than all other groups studied.

There are several suggestions as to why the male rate is so much higher than the female rate. One is that males attempting suicide tend to use violent means such as shooting or hanging, whereas females opt for more passive methods of suicide such as using medication.

While the suicide rate for males is higher, females attempt suicide three times more often than males.

In non-metropolitan areas between 1980 and 1990, seven times more males than females committed suicide. In metropolitan Melbourne, four times more males than females committed suicide.

Dr Krupinski suggests that the higher suicide rate in country areas may be due to frustration at having less opportunity for work, as well as having easier access to the more violent methods of suicide, such as guns.

The results could not determine whether the people who committed suicide were actually unemployed, only that in areas of high unemployment there was a higher suicide rate.

The inconclusive nature of this research has prompted the coroner's working party to undertake a prospective study involving

information from the families of people who have committed or attempted suicide.

"We believe that this study will provide us with much more insight as to why people commit or attempt to commit suicide," Dr Krupinski said. "It will also enable us to determine the potential risk among those who are more likely to try again."

He said a high proportion of people who commit suicide had made previous attempts. The new study will aim to determine those at the highest risk of suicide and then concentrate on prevention.

The youth suicide rate in Victoria is lower than in the rest of Australia but double the rate of England and Wales, indicating that there may be ways of reducing youth suicide in Victoria.

BY JULIET RYAN

## "STEP INTO MY OFFICE..."

### Fiona Findlay

You may not hear the Union's catering catch-cry of 'service, service, service' over a loud hailer, but the new functions controller has this target firmly in her sights for 1994.

Ms Fiona Findlay, who took up the position last year when Ms Norma Cornish retired, admits to moving into catering more by chance than design.

"I completed one semester of a bachelor of business degree before I realised that it wasn't really for me," she said. "After university, I spent a year or so doing different things - I worked up at the snow, spent some time travelling, and worked in a few pubs, and this was my first taste of the catering business."

"I decided that I enjoyed the catering area, so I enrolled in a three-year diploma in catering at William Angliss. It was a great course and I perfected the art of 'doing lunch'."

As soon as she finished her course, Ms Findlay took up a 12-month position as banquet manager at what is now known as the Bryson Hotel in Exhibition Street, before leaving to set up her own business with a college friend.

"At the grand old age of 24, I went tripping off down the Peninsula and bought a little restaurant called The Bellarine, just near Rye," she said. "It was a 40-seat restaurant that specialised in steak and seafood, and we revamped the whole place, changed the menu and gave it a new look."

"My partner would do the cooking, while I would do front of house, and sometimes when we were bored we would swap roles, which was always good for a laugh."

After two years, Ms Findlay sold her share of the business to work with Spotless Catering, who had the National Mutual contract in the city. "It was a busy job," she said. The group would feed between 600 and 1000 office staff a day, as well as provide all the boardroom and functions catering.

Since leaving Spotless Catering, Ms Findlay has managed several restaurants and hotels, including a bar and restaurant in Queen Street called Ninety Fifth and Queen, The Red Eagle in South Melbourne, and The College Lawn in Prahran. When the owners of Ninety Fifth and Queen successfully tendered for a new restaurant at Mount Buller, Ms Findlay was responsible for establishing the new restaurant.

"No one will believe that I was so busy I didn't ski once, particularly as it was a great season with record snow falls," she said. "I was still managing Ninety Fifth, so I commuted between Mount Buller and Melbourne."

Ms Findlay moved to Queensland for six months last year to help a friend run a restaurant, and vows she "was too busy to work on her tan". After returning to Melbourne, Ms Findlay managed Figaro, a small restaurant in Collingwood, before taking up the position at Monash.

"I see the Monash position as a combination of my job at Spotless Catering and the Bryson Hotel, but using all my experience from previous jobs," she said. "When I came to Monash, I had a pretty good idea of what to expect and because my role as functions coordinator more or less looks after itself, there is plenty of scope to become involved in different things."



Functions controller, Ms Fiona Findlay.

Ms Findlay said there have been changes in the type of functions being booked within the university, with fewer conferences and seminars but more demand for small, take-away orders.

"We are averaging around 20 to 30 take-away orders per day to different parts of the campus," Ms Findlay said. "This year we will be concentrating on what we can offer people between 9 am to 5 pm, Monday to Friday," she said. "One of my first priorities is to increase the range of take-away food and platters to cater for this demand and our catch-cry will be 'service, service, service'."

Other changes will see the traditional monthly pasta lunches replaced with 'theme' cuisines. In particular, there will be a surprise theme for the mid-year party!

## SOLution to travel to Malaysia

Monash's solar powered car SOLution has been invited to attend the 1994 Asia motor fair in Malaysia on 26 May.

SOLution will be the only solar powered car exhibited in the fair, whose theme is 'Man, machine and the environment'.

The fair gives the SOLution team the opportunity to exhibit and promote their solar achievements in a market where exhaust emission and pollution are important government issues.

The team will also be able to see the latest developments in the quest for alternative motor vehicle fuels such as palm oil.

Technologically, SOLution has undergone many changes in the past year. To keep up with the most recent advances in solar power, the University of Melbourne's Electrical Engineering department has taken over the fine-tuning of SOLution's electrical system.

University of Melbourne postgraduate student Mr Mark Burns said the engine's size was doubled, making the car more energy efficient and more powerful.

SOLution's Malaysian trip will not be the first the car has made overseas. In 1992 the car competed in the Grand Solar Challenge in Japan.

While the team was not successful in the race, they did gain important experience from the event.

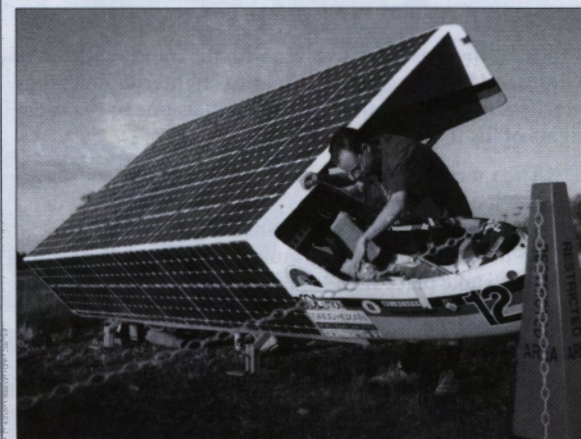
The mechanical engineering laboratory manager at Monash, Mr Ivor Little, said most entrants in the Grand Solar Challenge were quite happy to talk about their cars, although security around Japan's Honda "was like Fort Knox".

"Apart from the language barrier, which we had quite a bit of trouble with, we found other competitors very helpful. They were more than happy to discuss their vehicles," Mr Little said.

The race in Japan was excellent experience for the team, which has been competing in the Darwin to Adelaide solar challenge since it began in 1987.

Unfortunately, SOLution's racing days are over. For the 1996 World Cup, the team hope to enter a new solar powered car.

"We hope to pension off SOLution. Her solar cells are getting a bit tired, and technologically new things are happening all the time," Mr Little said.



SOLution undergoes a quick inspection during the most recent Darwin-to-Adelaide solar challenge.



# New report dismisses cannabis theory

Drivers who use cannabis are no more likely to be killed or seriously injured in a road accident than drug-free drivers, according to a \$100,000 Monash forensic study.

The study, conducted by the Victorian Institute of Forensic Pathology and the university's Department of Forensic Medicine, detected cannabis use among 11 per cent of 1045 driver fatalities throughout Victoria, New South Wales and Western Australia in the past three years.

But the study shows that cannabis, found in the blood tests conducted on 112 driver fatalities from January 1990 to 1993, did not appear to contribute to the level of culpability.

In fact results indicate that the culpability rate of cannabis users who have died at the wheel is lower than the rate for drug-free drivers killed in road accidents.

While extreme cases of drug abuse have been known to contribute to accidents, this is the first epidemiological study on the use of cannabis and its effect on road accident risks. The research includes tests similar to those in drink-driving studies.

The results dismiss the commonly held theory that cannabis is becoming an important cause of serious road accidents and is bound to add further weight to arguments for the drug's legalisation.

The research team, led by Associate Professor Olaf Drummer, devised a special way to assess the cause of each driver fatality during the period.

As well as toxicology tests, weather conditions, the culpability of other drivers, legal aspects such as speeding, road surface conditions and other factors were also taken into account in the study.

"The method [of testing the cause of an accident] involves establishing the responsibility or culpability of the driver using strict scoring guidelines in the absence of laboratory data on the presence or absence of drugs," the research report says.

"Drivers who were involved in accidents in which significant mitigating factors were identified [other than a drug] were given a score which placed them into a 'contributory' group.

"When a number of mitigating factors were identified, the drivers were placed into the 'not culpable' group."

In all cases it was found that cannabis consumption did not increase the culpability of the deceased driver.



Even when amphetamines are found in the cabin of a truck following a serious accident, Victoria Police are not permitted to blood test the driver.

Although the study proves that cannabis use before driving is not a threat to the community like drink-driving, Dr Drummer acknowledges that his research should not be taken as a green light to drive while under the influence of cannabis.

"Anybody using cannabis does not have an increased risk of having an accident, which is a surprising finding," Dr Drummer said.

"But it doesn't mean that cannabis is absolutely safe and should be legalised.

"There is no doubt that if you had a couple of joints now you should not get straight into your car and drive off.

"But the period of being affected is usually very short-lived, an hour or two, depending on how much you've smoked.

"Most people usually sit around and chat for a while after having a joint.

"Whereas if you take alcohol it doesn't disappear in an hour.

"If your BAC (blood alcohol concentration) is more than 0.1 per cent, you've got a few hours of impairment, at least."

Dr Drummer said the cannabis finding was reinforced by data from the same research, which established that drivers influenced by alcohol are no more at risk of having a serious accident than drivers combining cannabis and alcohol.

Of the 112 blood samples with traces of cannabis, 56 per cent also showed alcohol consumption.

The report said there was "no significant difference in BAC between those drivers

with cannabis and alcohol and those with alcohol only".

While the research found that cannabis does not multiply accident risks, it found that other illicit drugs do significantly increase the chance of motor accidents.

The report states that in 22 per cent of fatalities examined, some kind of drug other than alcohol had been found.

Almost half of all driver fatalities showed a drug, which includes alcohol, prescription and over-the-counter drugs, in blood samples.

There were 128 cases, or 12 per cent of the total sample, containing traces of illicit or recreational drugs, including cannabis, amphetamines, heroin and cocaine.

Apart from drugs that were classified as 'miscellaneous' by the report, which included medications such as cold relief treatments, the most commonly detected drugs were stimulants or amphetamines. These accounted for 3.7 per cent of fatalities.

The research established that driving after amphetamine consumption increased the road accident risk by 60 per cent.

The next most common were benzodiazepines, including Valium. The study concluded that this group of drugs increased the amount of risk by 1.9 times.

Figures show that an estimated six million prescriptions for benzodiazepines were issued last year alone.

Opiate usage, including heroin, methadone, morphine and codeine, was discovered in 2.5 per cent of all cases.

Dr Drummer found that opiate usage increased the risk factor by 4.2 times.

Predictably, alcohol was the most commonly consumed drug among all fatalities at 36 per cent.

About 91 per cent of blood samples containing alcohol were above the legal limit. The range of BAC was from 0.01 to 0.62 per cent.

Only 3.3 per cent of cases involving alcohol were below the legal limit of 0.05 per cent.

Although the report does not specifically recommend giving police additional powers for random drugged-driver detection, Dr Drummer hopes the report will encourage more debate on how to minimise drug-driving.

Unlike their NSW counterparts, Victorian police are not permitted to carry out blood tests on drivers suspected of drug use.

"If there is a serious accident, especially where somebody has been killed and the driver has nothing to hide, I can't understand the problem," Dr Drummer said.

He added that there have been serious truck accidents where the truck driver has had amphetamines in the cabin but has not been legally obliged to provide a blood sample.

Even when a driver is showing obvious signs of impairment, Victoria Police are powerless to force a suspect to undergo a blood test or an examination by a police surgeon.

A driver is quite within his or her rights to refuse to have a medical examination or blood test, and the driver's refusal to cooperate cannot be used as evidence in court.

Additionally, if a blood sample is taken to confirm an alcohol breath test and the sample also establishes illicit drug usage, police are not able to use the evidence relating to drug consumption in court.

The research was jointly funded by the NSW Roads and Traffic Authority, VicRoads, the Monash University Accident Research Centre and Austroads.

The report was started in 1992 with the support of the then police commissioner, Kel Glare, and VicRoads.

Associate Professor Drummer is honorary associate professor in forensic medicine at Monash University and assistant director (scientific services) at the Victorian Institute of Forensic Pathology.

BY PETER HENRYS

## Murray Homes – the voice of Gippsland

Murray Homes considers his 17 years at Gippsland as great fun and believes he is fortunate to have a hobby called 'work'.

Mr Homes, whose job as community relations manager at Gippsland ensures he is a well-known local identity, wears many hats including campus publicity, protocol and project management.

"I came from a strong lobbying background as a union official, which was supported by experience in community relations, so the campus director at the time believed I could offer something to the college," he said.

Mr Homes has been involved with the transformation of Gippsland from a regional college to an international university. He describes this development as one of the highlights of his time at Gippsland.

"The merger was a very important and strategic issue, and the local community was naturally wary of the takeover," Mr Homes said. "The ownership issue was critical, and in the end it was a community decision to allow the merger to take place with Monash.

"The matter was handled sensitively and generated goodwill and commitment towards Monash. Helping to steer the university and the community through this merger was fascinating."

Mr Homes believes strong regional links and community involvement has fostered a unique place for the campus in Churchill.

"Gippsland has successfully positioned itself in the local community with strong regional links and community involvement and support," he said.

"My job is to win the heart and soul of Gippsland," said Mr Homes. "Part of my role is to sell tertiary education to Gippsland and I am in regular contact with the local media," he said. "I guess you need to strike a delightful balance with the media – you can't afford to be over-exposed."

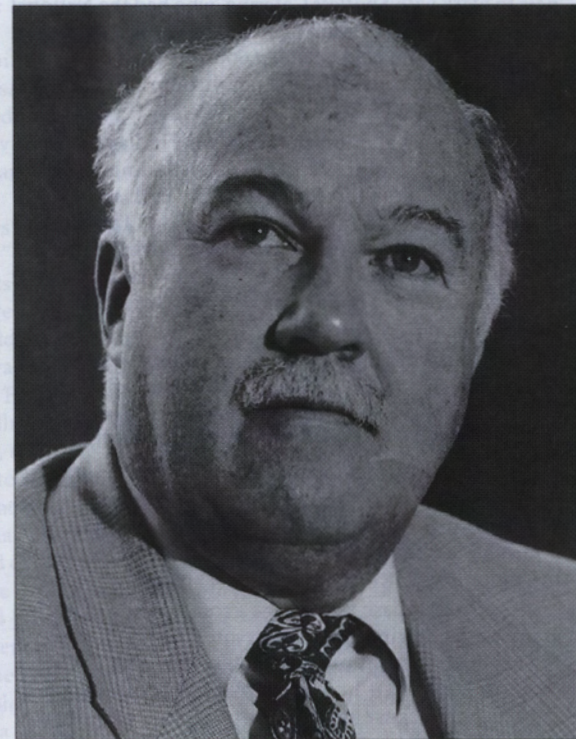
Mr Homes said the informal family and community networks throughout the Gippsland region were very important.

"I've always considered that one of my responsibilities is to report back to the university about the community's perception of Monash," he said.

Mr Homes has also worked as a teacher, auditor and jackaroo. "I have worked with many people at different levels, doing a lot of different things, so the community relations job was a natural extension of what I was already doing," he said.

The Gippsland campus, which now graduates about 1000 students each year (with about half of these from the local area), has been so successful in fostering close community links that it will be used as a model for the Peninsula campus.

"The Gippsland model shows that Monash is now a regional, state, national and international provider of education," Mr Homes said. "I don't believe there is a contradiction, just diversity."



Community relations manager on Gippsland campus, Mr Murray Homes.



# Montage readership survey

In order to improve *Montage* we would like to hear your opinions. By completing this survey you will be helping to shape *Montage* for the future. Please send the completed survey to us by 10 May.

External readers should mail to:  
Reply Paid 19 Monash University  
Public Affairs Office  
Main Administration Building  
Clayton Victoria 3168  
(no postage stamp required)

Or fax to:

The editor, *Montage*  
(03) 905 2097

Internal readers should mail to:

The Editor  
*Montage*  
Public Affairs Office  
Main Administration Building  
Clayton campus

1. Do you usually pass your copy of *Montage* on to others?

Yes ☐

No (proceed to question 4) ☐

2. If yes, how many people would normally read your copy of *Montage*? (tick one)

One other person ☐

Two or three other people ☐

Four or five other people ☐

More than five people ☐

Don't know ☐

3. Who do you pass your copy of *Montage* on to?

Family ☐

Friends ☐

Colleagues ☐

Students ☐

Others ☐

4. How much time would you normally spend reading *Montage*? (tick one)

Less than 20 minutes ☐

Between 20 and 40 minutes ☐

Between 40 minutes and one hour ☐

Other ☐

5. Which of the following best describes the way you usually read *Montage*? (tick one)

I skim through the pages quickly ☐

I read one or two articles and skim through the rest ☐

I read most of it ☐

I read through all of it ☐

6. Do you keep copies of *Montage* for later reference?

Yes ☐

No ☐

7. What do you think of our format? (Use the words 'too large', 'appropriate', or 'too small')

The page size is

The text size is

The size of each edition is

8. Which of the following statements express your views about *Montage*? (Use the scale 'strongly agree' [SA], 'agree' [A], 'neutral' [N], 'disagree' [D], or 'strongly disagree' [SD])

It is interesting to read

It is informative

It is the right length

There are sufficient photographs/graphics

There is a good range of articles

The layout is appealing

9. Which of the following do you read regularly (ie every issue)?

Research Monash ☐

Savant ☐

Now & Then (page 2) ☐

The Spike (page 2) ☐

Monvox ☐

Arts page ☐

People page ☐

10. How do you receive *Montage*?

Mailed to home or business address ☐

Internal mail ☐

Pick up from points around campus ☐

Passed on from colleagues ☐

From a faculty office ☐

11. Who are you?

Academic staff ☐

General staff ☐

Student ☐

Media ☐

Other ☐

12. Where are you located?

Clayton campus ☐

Caulfield campus ☐

Peninsula campus ☐

Parkville campus ☐

Gippsland campus ☐

Other ☐

13. We are interested in your comments on the role of a university newspaper, and any other suggestions that might help us improve *Montage*.

Please return this survey by 10 May.

Thank you for your help.

## Opportunities for the disabled increase

Employment opportunities at Monash for people with disabilities have been boosted thanks to the expansion late last year of the university's Disability Support Program.

Already, four disabled people have been employed on Clayton campus under the scheme, which has for some years provided support to students with disabilities.

The expanded program has also provided an advice service for existing and prospective staff with disabilities and has promoted the rights of people with disabilities within the university.

The program's consultant, Mr Michael Coll, said that since the scheme's expansion, placements had been made in Student Employment, Student Services, the Disability Liaison Office and in the university's Grounds section.

Mr Coll said he expected that employment opportunities for the disabled would increase at Monash and that supported employment places could rise to 10 by the middle of this year.

"The program has concentrated on supported employment in conjunction with the Spastic Society's WorkFocus program," Mr Coll said.

A disabled person comes to Monash on work experience and is supported by a skilled trainer from WorkFocus.

"Placements are negotiated on the basis of the needs of the employer and the employee, and can range from six weeks to six months," he said. "The next stage is to introduce competitive employment placements for people with disabilities."

Mr Coll expected there would also be an increase in contract and tenured positions for people with disabilities resulting from the program. "Disabled people will be encouraged to apply for positions, and employers will come to realise their worthiness as candidates for appointments," he said.

Mr Coll stressed that the program was as much for managers and employees as it was for people with disabilities.

"Apart from the right of people with disabilities to be included in the general workforce and compete for jobs on the basis of their qualifications and abilities, we can all benefit from the examination and adjustment of jobs and work areas that come from these programs," he said.

"Having a disability does not mean that a person is not capable of working in their chosen profession."

He said that it was important for people with disabilities to be given access to meaningful careers.

"Another central aspect of the program has been to support managers, ensuring that they do not inadvertently discriminate against people with disabilities and that they have a greater understanding of legislation governing the employment rights of people with disabilities," Mr Coll said.

"With the level of support and encouragement the program has received from Monash managers and staff, I anticipate a successful future for staff with disabilities at Monash," he said.

For further information about the program, contact extn 55991.

## Computer learning the way of the future: QED

Most of us have heard about computer-assisted learning, but very few people actually know how to use it.

If Dr Brian Chapman has his way, however, this will change in the next 12 months.

Not only will students become adept at using a computer as a training aid both in and out of tutorials, but also academics will learn to be the electronic authors of their own tutorial and support materials.

Dr Chapman's vision for education in the future was recently formalised with the establishment of the Quality Education at a Distance (QED) Research Unit, based in the Education faculty.

Already he has helped devise interactive learning programs for the Physiology department that include scanned electron micrographs, animation and simulation.

One of the programs guides students through a practical experiment involving the identification and removal of a nerve in a frog's leg. The computer, which sits beside the students as they perform the task, displays images of the procedure step by step.

This method has distinct advantages, Dr Chapman says, because students don't have to try and remember the details of the procedure from an initial demonstration by the lecturer, and it also increases the quality of questions asked of the lecturer throughout the practical.

The frog-leg experiment computer program has been developed using a template that Dr Chapman says will be the basis for many other interactive learning modules.

The module template gives the basic structure for a tutorial and simply requires the lecturer to insert the necessary material.

Interactive computer programs have many applications and will no doubt

revolutionise our teaching and learning in the next few years. Many tutorials, exams and practicals might eventually be taken via a computer. Also the modules provide students with a very good method of self-assessment.

"This is not to say that academic staff will become redundant," Dr Chapman is quick to point out. "The programs will simply aid the teaching process and will make practical tasks and self-assessment easier."

Dr Chapman says that initially the majority of modules will be developed in the biological sciences. In the future though, engineering and non-science subjects will benefit from the teaching method.

Currently only a few lecture theatres on Clayton campus are equipped with the facilities required to demonstrate interactive computer modules. Over time, however, more resources will become available, increasing the use of these teaching methods.

To overcome the fact that very few academics have electronic authoring skills for creating their own teaching materials, an Electronic Authors of Monash University (EAMU) group has been established.

"EAMU will provide a forum for authors of electronic courseware to present their work and learn of the work of other authors," Dr Chapman said.

Eventually the QED Research Unit aims to translate its evaluated modules into Asian languages, for use overseas.

QED is funded by the vice-chancellor, the Monash Development Fund and a grant from the Committee for the Advancement of University Teaching (CAUT).

For further information, contact the QED Research Unit on extn 52872.



# Beyond the boundaries of human research

The requirement for all research to be ethically reviewed is part of the general increase in awareness of ethical issues in all areas of life, from medicine to banking and from science to social science.

Ethical review of all research has become policy because of the excesses of some researchers, complaints from some research subjects, and because some have used ethical concern unethically to block research they did not like.

The ethical review of research in the social and behavioural sciences is relatively recent. At Monash, the systematic review of all research involving human beings, including research in the social sciences and business fields, began in earnest a little over five years ago. The reaction from many was the same as the initial reaction from those in medicine and science earlier – shock, annoyance, and dismay. “Trust me, I’m a...”; or, “Don’t you know that our professional society has a code of ethics?” Rather more rude and angry responses were occasionally received.

Social and behavioural science research requires ethical review for two basic reasons. First, all human interaction raises ethical issues. Not all of these require a standing committee of the university to sort out, but a procedure is required to ensure that ethical examination of proposed research occurs and can be seen to occur.

Second, much of social and behavioural science and business research involves gathering information about living people, some of which is sensitive or potentially damaging to them. There is less concern about those who have died, perhaps because it is harder for them to sue.

The major ethical issues in research fall into three broad areas: honesty and accuracy in the conduct and reporting of research; consideration for and protection of the subjects of research; and concern for the researcher. The ethical codes of professional societies tend to focus on the first, enjoining researchers not to cheat, fake data or overstate their case, and also to be fair to co-researchers.

For social and behavioural science research, the major ethical issues related to the protection of the subject involve gaining appropriate informed consent, respecting a person’s privacy and the confidentiality of information gathered, and being aware of the power dimension in the relationships between the researcher and the subject(s) of the research.

Also, a researcher must ensure that the research procedures are adequate to answer the questions posed. The

committee appreciates the wide range of research methodologies legitimately employed by various disciplines in the university, however within each methodology conducting ill-designed research is unethical.

All research funded by NHMRC and most other funding bodies must go to the Ethics Committee.

Clearance is given by a properly constituted ‘institutional ethics’ committee. Such a committee, with lay, legal and ecclesiastical representation, provides an independent forum in which to raise and air ethical issues related to research involving humans.

written, witnessed and kept. But there are exceptions to this that need to be carefully explained to an ethics committee.

There is a double-bind in safeguarding information about subjects. On the one hand a researcher must know (or at least be able to know) from whom each bit of data has been collected in order to defend themselves against any charge of faking the data. On the other hand, knowing this means a researcher cannot promise confidentiality, because the law does not provide it for researchers in the social sciences. Researchers can be subpoenaed and the Freedom of Information Act applies to their research files. Some techniques can maximise the protection of a researcher’s subjects, but it is not possible to promise anonymity and confidentiality. Therefore, researchers must be explicit about what protection they are offering, how they are dealing with potentially identifying information, how they are storing the data, and how reporting is to occur.

While the power dimension in physical, biological and medical research has long been understood, the social scientist too can have a position of power over research subjects.

The essential power differentials are between the more versus the less educated, the higher versus the lower status, a male versus a female, a recent migrant versus a migrant of longer standing, or a teacher versus a student. This power dimension becomes even more important when the researcher has some control over the research subject. This is true of such relationships as teacher/student, social worker/client, nurse/patient, parole officer/client, supervisor/postgraduate student. Where there is a power differential of this sort in the relationship between the researcher and the research subjects, the committee is particularly concerned to protect the subjects from any coercion or negative consequence of information that may be obtained through the research.

Monash staff wishing to apply for ethical approval can obtain applications from the Secretariat on extn 52052. A full outline of the necessary procedures is featured below

in ‘Ethics approval: that time of year’.

Mr Gary Bouma is an associate professor in the Department of Anthropology and Sociology. He is deputy chair of the Monash University Standing Committee on Ethics in Research on Humans.



So what research must go to the ethics committee? All research involving the gathering of information about living people, the use of archive data that contains identifiable information about living people, and all research of a sensitive nature (you never know what someone will find sensitive).

There are no blanket exclusions.

Subjects must be fully informed, able to consent and able to withdraw their consent at any time without penalty. To do this they must be told what will happen to them and the information gathered about them in a language that they will understand. In the ideal situation, consent is

## Ethics approval: that time of year

Many research proposals fail to gain approval from ethics committees because the researchers lack understanding about submission requirements, according to Professor Gary Bouma.

Ethics approval is a relatively new field for researchers in the social and behavioural sciences and Professor Bouma, deputy chair of the Standing Committee on Ethics in Research on Humans, says that if researchers aren’t sure whether their proposals require approval, then they should file an application anyway.

“The university will provide appropriate backing for researchers who have ethical approval should anything go wrong in the conduct of the research, but accepts no liability for research that has not been approved,” he said.

All research involving humans as subjects must be submitted to the committee. All honours, masters and PhD projects

involving the study of humans must also be submitted.

Undergraduate research generally doesn’t require approval, but exceptions do occur.

Following, Professor Bouma has outlined the procedures and common problems encountered by researchers preparing submissions for ethics approval.

### ■ Applications forms

Application forms are available from the Secretariat on extn 52052. If you prefer, send a disk to Ms Anita Pike, indicating the appropriate word processing language, and she will copy a form onto it.

Since one form is used for many styles of research, some sections will be more relevant than others. When completing the form it is important to remember that while the members of the committee have a wide range of expertise they are not necessarily authorities in your area. In this sense the ethics sub-

mission is quite different from a research proposal to be evaluated by colleagues. Plain, direct language at a level understandable by the average person is appropriate.

In preparing your submission, spell out all procedures in plain language, indicate the subjects of the research, and outline the consent procedure step by step. Some find using a flow chart helps to clarify procedures. Show the application to a few colleagues, especially those who have made earlier submissions.

### ■ Plain language statement

The plain language statement tells potential subjects what is required of them, and is one of the most important parts of the application.

The statement is essential for gaining informed consent. Use simple language, giving plain and explicit information of the kind

you expect from your surgeon when explaining a forthcoming operation.

### ■ Review of submissions

Two committee members (or a pre-screening committee in education and psychology) meet to determine whether (a) the proposed research needs to be examined by the whole committee, (b) an interview is required to clarify issues, or (c) the application is insufficient to be considered at this stage.

The committee meets monthly. Applicants will be notified beforehand if an interview is required, alternatively, they will hear of the result shortly after the meeting.

### ■ Failure to secure ethical approval

According to the Ethics Committee, submissions most often fail to secure ethical approval, or experience delays in approval, because they are incoherent, inconsistent, or incomplete.